



Washington Reading Corps Impact Evaluation

FINAL REPORT AND RECOMMENDATIONS

Mission360 Consulting, LLC
www.mission360consulting.com



Washington Reading Corps Program Impact Evaluation

July 2019

Authors

This study was conducted by researchers from Mission360 Consulting, LLC; JEMM Consulting, LLC; and Parsimony, Inc.:

- Patrice Tetta, M.S., Mission360 Consulting, LLC;
- Jordan Baker, M.S., Parsimony, Inc.; and
- Amanuel Medhanie, Ph.D., Parsimony, Inc.

The researchers had support from Caroline Cochran, Ph.D., JEMM Consulting, LLC.

For citations and reference to this publication, please use the following:

Tetta, P., Baker, J., & Medhanie, A. (2019). *Washington Reading Corps Impact Evaluation Final Report and Recommendations*, Washington Employment Security Department, Olympia, WA.

Please note: the conclusions and recommendations presented in this report reflect the perspectives of the researchers listed above, not necessarily those of the Washington Reading Corps.

Acknowledgements

The researchers would like to thank the following individuals and organizations for their assistance in conducting this study:

- The Washington State Office of Superintendent of Public Instruction, which provided the student data (not individually-identified) necessary to conduct the analyses.
- The individual Site Supervisors who graciously gave their time for interviews.
- The Washington Reading Corp staff who provided the assistance we needed to carry out the research efficiently and effectively.
- Researchers at RMC Research Corporation, who developed the original study design upon which this evaluation work relied.

Table of Contents

EXECUTIVE SUMMARY	1
Purpose of the Study.....	1
Study Design.....	1
Key Findings	2
Recommendations.....	3
WASHINGTON READING CORPS IMPACT EVALUATION.....	4
About the Washington Reading Corps	4
About the Evaluation Study.....	8
Study Design.....	10
Conclusions and Implications.....	28
Recommendations.....	29
APPENDIX A: DATA FILES AND VARIABLES USED	32
APPENDIX B: STUDENT DESCRIPTIVE STATISTICS AND AVERAGE MONTHS OF GROWTH	34
Overall	34
Gender.....	35
Race/Ethnicity.....	36
Free or Reduced-Price Lunch (FRPL) Status.....	38
English Learner (EL)/Limited English Proficiency Status.....	39
Grade Level.....	40
APPENDIX C: WRC SITE SUPERVISOR INTERVIEW QUESTIONS	41
APPENDIX D: WRC SITE SUPERVISOR INTERVIEW CONTENT ANALYSIS.....	45
APPENDIX E: WRC LOGIC MODEL.....	57

EXECUTIVE SUMMARY

In 2018, Washington Reading Corps (WRC), a statewide literacy-support program, hired Mission360 Consulting, LLC to conduct an external impact evaluation that would examine the overall effect of full-time WRC literacy tutors placed in Kindergarten through 4th grade classrooms in public schools across Washington State.

Purpose of the Study

The goal of this study was to measure differences in literacy-skill and reading growth between two groups of Washington State public school students in grades K through 4:

- A treatment group, who received WRC tutoring in combination with other services provided through the Washington State Learning Assistance Program - English Language Arts (LAP ELA), and
- A comparison group, who received other LAP ELA services, but no WRC tutoring.

The study was designed to provide statistical evidence of the impact of WRC tutoring on reading growth compared to what would have happened in the absence of the program. The study focused on students identified as needing “Tier 2” reading interventions (students not making expected progress with standard literacy and reading instruction, assessed as needing targeted intervention to meet benchmarks). The study also measured the impact that WRC tutors have on the culture of reading in the schools and communities they serve.

The two research questions investigated were:

1. To what extent do months of growth differ between Tier 2 students served by a combination of WRC tutoring and other LAP ELA services and Tier 2 students served only by other LAP ELA services?
2. To what extent does the work of WRC Members impact the culture of reading in the school and in the local community?

Study Design

The mixed-methods evaluation included two components:

- A quasi-experimental design study that used *quantitative program-level and student-level data* from Washington State’s CEDARS longitudinal database to test whether schools at which WRC Members were placed showed statistically-significant differences in student reading growth (as measured by changes in assessment scores) compared with similar schools that did not have WRC Members.
and
- A case study that used *qualitative data* collected from phone interviews with staff at WRC service sites to assess and describe WRC’s impact on the culture of reading at the site and in the community.

Key Findings

This study resulted in three key findings:

- 1) *No statistically-significant differences in months of reading growth were found between students who received a combination of WRC tutoring and other LAP ELA services and students who received only other LAP ELA services.*

To examine the relationship between student-level characteristics and school-level characteristics and student reading growth, several statistical models were fit on a sample of 5,457 students. The results of the models suggested that neither receiving a combination of WRC tutoring and other LAP ELA services nor receiving only other LAP ELA services was a significant predictor of students' reading growth.

- 2) *The effect of WRC tutoring on reading growth does not differ significantly by student demographics, such as income status (as indicated by eligibility for the federal Free or Reduced-Price Lunch program) or ethnicity.*

Through the use of statistical models, the researchers assessed whether reading growth differed among different demographic groups for students who received a combination of WRC tutoring and other LAP ELA services compared with students that received only other LAP ELA services. The results of the models suggested no significant differences in the effect of the combination of WRC tutoring and other LAP ELA services compared with only other LAP ELA services by either student income status (eligibility for Free or -Reduced- Price Lunch program) or ethnicity.

- 3) *Site staff at schools where WRC Members are placed perceive a significant, positive impact for WRC on the culture of reading at their schools.*

Site Supervisors interviewed expressed a high regard for the WRC program and for the members placed at their sites. Their praise for the program was consistent and effusive.

Recommendations

The researchers are making the following recommendations to WRC, so that the organization can more clearly drive and measure impact for WRC tutoring.

Recommendations for Program Implementation and Data Collection

- 1) Standardize the WRC model and the assessments used to measure reading growth.
- 2) Create and require the use of an electronic system (a) for WRC site staff to report on all member activities and (b) for individual WRC Members and community-based volunteers to report on tutoring provided, including electronic entry of assessment data to minimize errors in the entry and reporting of student assessment scores.
- 3) Work with the administrators of the CEDARS longitudinal database to create clearer ways to distinguish which students receive WRC tutoring, which students receive only other LAP ELA interventions, and which students receive both.
- 4) Work to identify a control group of students who receive neither WRC tutoring nor other reading interventions in order to more clearly demonstrate the impact of WRC tutoring.

Recommendations for Future Study

- 1) The researchers strongly recommend that WRC establish core tutoring model and pilot that model with a subset of program sites that agree to implement the model with fidelity. A quasi-experimental study could be designed to evaluate the impact of the standard model compared with the existing, non-standardized tutoring services WRC Members provide.
- 2) The researchers also recommend either (a) changing the way WRC and other LAP ELA services are flagged in the CEDARS longitudinal data system or (b) creating some other reliable, electronic method to identify the specific interventions provided at the student level and then re-implementing substantially the same study.
- 3) In addition, the researchers recommend conducting a broader survey of site staff at all WRC sites, which would include questions from the interview tool created for the case study (described earlier) as well as a range of other topics. Responses from these surveys could be used to determine areas of deeper exploration and identify a subset of site staff to interview to gather further information to guide program improvement and/or future areas of study.

WASHINGTON READING CORPS IMPACT EVALUATION

About the Washington Reading Corps

Background, History, and Need

WRC is a dynamic statewide literacy-support program designed to support the development of “school readiness” skills for children in early learning centers and improved academic performance in reading for elementary school students.

WRC harnesses the talent, energy, and passion of AmeriCorps Members to work in alignment with schools and community-based organizations to provide literacy-focused interventions individually and/or in small groups, including:

- Evidence-based literacy skills-building activities and support for low-income and English Learner (EL) preschool children who do not meet age-appropriate benchmarks for literacy development.
- Evidence-based reading tutoring for low-income students (those eligible for Free or Reduced-Price Lunch) and EL students in Kindergarten through Grade 4 who do not meet grade-level benchmarks in reading.

Both preschool children and K-4 students served are those considered to be “Tier 2” in most Multi-Tiered Systems of Supports (that is, they struggle with literacy or reading but do not experience the most severe learning challenges).

The first program of its kind in the nation, WRC was created in 1998 through an unprecedented collaboration between four public agencies: the Washington Governor's office; the Washington State Commission for National and Community Service; the Washington Employment Security Department, which houses the Washington Service Corps (WSC); and the Office of the Superintendent of Public Instruction (OSPI), Washington's State Education Agency.

These four agencies established WRC to advance the state's vision for literacy: to ensure all children and youth are able to effectively read, write, speak, think, create, problem solve, and reflect in order to participate in a democratic, multicultural society.

Now jointly led by WSC and OSPI, WRC provides literacy tutoring to students who are not meeting grade-level standards in reading. This collaborative governance helps ensure that all WRC programming not only is fully aligned with the state's literacy development guidelines, reading standards, and comprehensive plans to improve student reading proficiency, but is also deeply rooted in the vision and goals of national service.

Since its inception, WRC has worked to address the significant challenges in Washington State related to children's literacy development and young students' reading proficiency and the impact of low literacy and reading proficiency levels on later academic success.

Decades' worth of research (Hernandez, 2012¹; Lesnick et al, 2010²; Snow, Burns & Griffin, 1998³) shows that 4th grade reading proficiency is critical for school success and that a solid foundation of literacy skills before kindergarten entry is crucial to achieving grade-level reading proficiency by 4th grade. This research indicates that children who enter kindergarten with lagging literacy skills stay behind their peers and continue to struggle not only with reading but also with other core academic subjects that demand reading proficiency (Bridges, et al, 2004⁴).

Without significant intervention, 75% of students who are poor readers in elementary school remain poor readers in high school (U.S. Department of Education, 1999⁵) putting them on "the high school dropout track": in a great many cases, [dropping out] is the result of not being able to read proficiently as early as 4th grade (Feister, 2010⁶).

The students who struggle most with reading are disproportionately poor children of color (Feister, 2013⁷). In 2017, disparities in performance on the National Assessment of Educational Progress (NAEP)—a.k.a. "The Nation's Report Card"—were wide: the average reading scale score for all 4th grade students was 221 points, with a 28-point gap between low-income students and higher-income students, and a 37-point gap between students who are English Learners (EL) and those who are not.⁸

National trends are echoed in Washington, where the majority of low-income and EL 4th graders lag significantly behind their peers: on the 2017 NAEP, the average reading scale score for all 4th grade students in Washington, 223 points, was slightly higher than the national average, but the disparities between student groups were larger: The state had a 32-point gap in 4th-grade reading scale scores between low-income students (FRPL eligible) and higher-income students not FRPL eligible) and a 48-point gap between EL and non-EL students.

In addition, in the 2017-18 academic year, only 42.8% of low-income students (those eligible for the federal Free or Reduced-Price Lunch program) met or exceeded grade-level standards in English Language Arts (ELA), compared with 74.5% of students who were not low income and only 14% of English Learners met or exceeded grade-level ELA standards, compared with 64.5% of students who

¹ Hernandez, D. (2012). Double Jeopardy: How Third Grade Reading Skills and Poverty Influence High School Graduation. Baltimore, MD: The Annie E. Casey Foundation. <https://www.aecf.org/resources/double-jeopardy/>

² Lesnick, J., George, R., Smithgall, C., & Gwynne, J. (2010). Reading on grade level in third grade: How is it related to high school performance and college enrollment? Baltimore, MD: Annie E. Casey Foundation. <https://www.aecf.org/resources/reading-on-grade-level-in-third-grade-how-is-it-related-to-high-school-perf/>

³ Snow, C. E., Burns, S. M., & Griffin, P. Editors. (1998). Preventing Reading Difficulties in Young Children, Chapter 4: Predictors of Success and Failure in Reading. National Research Council, National Academy of Sciences. Courtesy of National Academy Press.

⁴ Bridges, M., Fuller, B., Rumberger, R., & Tran, L. (2004). Preschool for California's children: Promising benefits, unequal access. Berkeley, CA: Policy Analysis for California Education (PACE).

⁵ U.S. Department of Education, America Reads Challenge. (July 1999). Start Early, Finish Strong: How to Help Every Child Become a Reader. Available at www2.ed.gov/pubs.

⁶ Feister, L. (2010). Early Warning! Why Reading by the End of Third Grade Matters. KIDS COUNT Special Report. Baltimore, MD: Annie E. Casey Foundation.

⁷ Feister, L. (2013). Early warning confirmed: A research update on third-grade reading. Baltimore, MD: Annie E. Casey Foundation.

⁸ https://www.nationsreportcard.gov/dashboards/achievement_gaps.aspx

were not identified as English Learners (State of Washington Office of Superintendent of Public Instruction⁹).

WRC works to provide additional support for students from pre-K through 4th grade to help them make gains in reading growth that will enable them to meet or exceed grade-level ELA standards.

Programming and Services

To address the need for literacy and reading improvement among low-income and EL children and students who are below literacy and reading benchmarks, WRC engages in a variety of activities each year, including:

- Providing leadership, guidance, training, technical assistance, and program coordination for sites across the state.
- Placing AmeriCorps Members at program sites across the state (including high-needs¹⁰ early childhood education programs, elementary schools, and community-based organizations) to provide evidence-based literacy skills-building activities and interventions.
- Coordinating with site-based program staff who are responsible for overseeing the service of the Members placed at their sites) to provide Member supervision and support, site-specific literacy and tutoring training, and assessment of individual students' strengths and needs.
- Offering other resources, primarily through regional Educational Service Districts, including technical assistance from literacy specialists and data from Washington State's Comprehensive Education Data and Research System (CEDARS) longitudinal database.¹¹

The literacy activities and reading tutoring WRC Members provide directly address assessed student needs and are aligned with state standards and best practices in literacy development and reading support. Schools at which Members are placed are identified through a formal Request for Application process and priority for Member placement is given to schools with the highest percentages of low-income (FRPL-eligible) and/or EL students.

In the 2017–2018 program year, WRC enrolled 178 AmeriCorps members (158 full-time and 20 half-time) to provide (a) evidence-based literacy skills-building activities for low-income and English EL children from age 3 to 5 and (b) evidence-based reading tutoring for low-income and EL students from kindergarten through Grade 4. Members served in approximately 100 high-need early learning centers and elementary schools throughout Washington State and provided tutoring to 711 children ages 3 to 5 and 4,154 Kindergarten to grade 4 students. Most WRC sites are elementary schools and vary greatly in geographic location, available resources, grades served, staffing structure, and how they support their WRC Member(s).

Of the Kindergarten through 4th grade students served through WRC the program that year, 2,901 completed the program (either met benchmarks and exited the program or participated for at least 6

⁹ All state-level data cited is from the state's Report Card, accessed at <https://washingtonstatereportcard.ospi.k12.wa.us/ReportCard/ViewSchoolOrDistrict/103300>

¹⁰ "High-needs" elementary schools are those that enrollments of at least 60% low-income students, with low-income defined by eligibility for the federal Free or Reduced-Price Lunch program under the Richard B. Russell National School Lunch Act [20 USCS § 1021 (11)].

¹¹ Through the CEDARS longitudinal database, OSPI collects, stores, and reports on student enrollment, completion, and proficiency data. Data from CEDARS was used for the quantitative analyses in this study.

weeks and/or through the end of the school year). Of those 2,901 students, 1,199 met benchmarks or made at least 11 months of growth in reading by the end of the program year.

WRC Theory of Change and Logic Model

WRC has articulated a theory of change to guide its work:

By recruiting, training, placing, and supporting AmeriCorps members who (a) provide evidence-based tutoring to children who do not demonstrate age-appropriate language and literacy skills and to students who are below grade level in reading proficiency – particularly those who are low income or English Learners – and (b) engage parents in their children’s early learning and academic growth, WRC will increase school readiness, accelerate growth toward reading proficiency, and improve parents’ capacity to support learning at home for participating children.

This theory of change is supported by a logic model that outlines the needs the program is addressing, described the inputs and activities the program uses to address identified needs, and articulates the specific outputs and outcomes the organizations projects to achieve as a result of the inputs and activities. WRC’s full logic model is included in the appendices of this report.

As shown in that document, in the short term, WRC anticipates achieving the following outcomes at the sites at which AmeriCorps members are placed:

- (a) Among the children and students who complete WRC tutoring, improvements in:
 - Reading attitude and behaviors, measured by post-program surveys.
 - Language and literacy skills, measured by pre- and post-program assessments.
 - Reading proficiency or months of reading growth, measured by pre- and post-program assessments.
- (b) Increases in family participation in literacy nights and similar activities, measured by parent surveys and event sign-ins.
- (c) Reports by WRC Members that they intend to pursue career pathways into education, measured by surveys.

In the medium term, WRC anticipates that school sites served by WRC Members will see increases in the percentage of children who meet or exceed age-appropriate benchmarks in language and literacy and grade-level benchmarks in reading. Over the long term, these improvements will increase college readiness and college and career success for WA students.

Prior Evidence of Effectiveness for WRC’s Model

In 2015, an external outcome evaluation was conducted by RMC Research Corporation to assess the impact of WRC tutoring on student reading outcomes. The evaluation used a hierarchical linear model (HLM) to assess WRC’s impact on student reading outcomes. Specifically, the evaluators tested the impact that certain site-level characteristics (supervisor helpfulness, tutoring group size, length of employment for WRC staff, total school enrollment) and student-level characteristics (average minutes per tutoring session, average tutoring days per week) had on student reading outcomes. The model utilized data exclusively on students that received WRC tutoring.

In all, the model examined data from a sample of 25 schools and 1,972 children who had received WRC tutoring. The HLM results implied that, for these children, the only significant predictor of meeting grade-level reading benchmarks was Site Supervisor helpfulness, where higher supervisor helpfulness was associated with a higher likelihood of meeting reading benchmarks.¹²

A notable limitation of this study was the lack of a control group consisting of students who were characteristically similar (in ethnicity, reading proficiency, etc.) to students who received WRC tutoring, but who did not receive WRC tutoring themselves.

Because of this limitation, the 2015 evaluation tested only for differences in student reading growth according to *dosage* of WRC tutoring (i.e., duration of tutoring sessions and number of tutoring sessions per week) and not by the inclusion or absence of WRC tutoring.

About the Evaluation Study

The current study was intended to address some of the limitations of previous evaluations by directly comparing months of reading growth for two different groups of Washington State public school students in grades K through 4: a treatment group of students who received both WRC tutoring and other services through the Learning Assistance Program - English Language Arts (LAP ELA) and a control group of similar students who received only other LAP ELA services, but no WRC tutoring.

Description of Services Provided

LAP ELA Services

The Washington State Learning Assistance Program - English Language Arts (LAP ELA) offers supplemental services for K–12 students who score below grade-level standards in English language arts (ELA), with a focus on students through grade 4. LAP ELA aims to accelerate literacy and reading growth to ensure students make progress towards grade level benchmarks. Each school district that receives LAP ELA funds must use those funds to implement interventions for students who are not making expected progress.

These interventions can be either:

- One or more of the practices from the LAP ELA Menu of Best Practices, which includes a wide range of interventions that are identified as promising, research-based, or evidence-based.¹³
- or

¹² $\beta = 0.55$, p -value = 0.04. These findings suggest that at sites where Washington Reading Corps members perceived the Site Supervisor to be helpful in implementing the tutoring model, students were 1.74 times more likely to meet reading benchmarks.

¹³ *Evidence-based* means a program or practice that has been tested in heterogeneous or intended populations with multiple randomized, or statistically controlled evaluations, or both; or one large multiple site randomized, or statistically controlled evaluation, or both, where the weight of the evidence from a systematic review demonstrates sustained improvements in at least one outcome. *Research-based* means a program or practice that has been tested with a single randomized, or statistically controlled evaluation, or both, demonstrating sustained desirable outcomes; or where the weight of the evidence from a systematic review supports sustained outcomes [. . .] but does not meet the full criteria for evidence-based practice. *Promising* means a practice that, based on statistical analyses or a well-established theory of change, shows potential for meeting the evidence-based or research-based criteria.

- Alternative practices for which the district is able to provide evidence that the practices meet the definition of promising, research-based, or evidence-based.

The interventions included in the LAP ELA Menu of Best Practices fall into four broad categories and school districts may use LAP ELA funds to offer one or more interventions that fall into these categories:

- 1) Student-centered practices and strategies, which focus on direct supports for students who have been identified as below benchmark.
- 2) Educator-focused practices and strategies, which aim to increase educators' capacity to accelerate student reading growth.
- 3) Transition and readiness practices and strategies, which are geared to provide additional support for students at key transition points, such as the 8th-grade-to-high-school transition.
- 4) Family and community practices and strategies, which focus on family and community engagement as the key to student reading success.

While the LAP ELA Menu of Best Practices does not identify specific branded programs that meet the definitions of promising, research-based, or evidence-based, it does identify the specific best-practice strategies school districts can implement, and offers both success factors for districts to consider when planning interventions and other considerations related to students, including student demographics, proficiency level, age and grade level, etc.

One of the main best practices in the "student-centered" category of the LAP ELA Menu of Best Practices is "Tutoring by Adults." According to the menu "carefully selected adult tutors¹⁴... can provide targeted one-on-one or small-group instruction to meet the specific needs of students."

The specific evidence-based strategies for this best practice include, among other strategies:

- Targeting students who are reading below grade-level proficiency standards and who have not yet met grade level ELA assessments.
- Selecting a scientifically research-based intervention model within a multi-tiered system of support that use individualized, diagnostic assessments to design appropriate developmental lessons for students.
- Providing extensive and ongoing tutoring for all tutors that includes observation and correction techniques.
- Providing one-to-one or small group tutoring, consisting of 3–6 students.

The LAP ELA services provided by the schools included in this study would have fallen into one of the four broad categories listed above. It is important to note that the CEDARS database, from which the researchers received the student data that was analyzed, indicates only whether LAP ELA services were provided. CEDARS does not identify either which category of services were provided or which specific services students received and no other data was available to the researchers that would have identified the specific LAP ELA service provided.

¹⁴ "Adult tutors" can be teachers, intervention specialists, paraeducators, other classified personnel, and volunteers [including Washington Reading Corps members] who receive specialized professional learning in foundational literacy skills and the state's ELA standards.

WRC Tutoring

WRC Members provide: (a) evidence-based literacy skills-building activities and supports for low-income and ELL preschool children who do not meet age-appropriate literacy-development benchmarks and (b) evidence-based reading tutoring for low-income and ELL students in kindergarten through grade 4 who do not meet grade-level reading benchmarks.

These interventions are provided individually and/or in small groups of three to six students for preschool children and K-4 students those who are struggling with literacy or reading but are not experiencing the most severe learning challenges (labeled “Tier 2” in a Multi-Tiered System of Support). Children and students receive WRC tutoring at least 3 times weekly, for at least 15 minutes each session and the focus of tutoring sessions is based on assessment of individual student needs.

WRC tutoring is considered a “best practice” approach, as defined by the LAP ELA Menu, because members are well-trained adults who provide research- or evidence-based tutoring within a multi-tiered system of support, focusing on students who have been identified through diagnostic assessments as being in need of Tier 2 interventions.

It is important to note that Washington is a “local control” state, meaning that each of its 295 school districts makes its own decisions about a wide range of policies, processes, and programs including education curricula and student assessment. Consequently, some variation among sites exists in the format of tutoring (e.g., “push-in” provided in the classroom or “pull-out” tutoring provided outside the classroom), the schedule and duration of sessions, the content tutored, and the formative and summative assessments used. These variations are based on local program implementation logistics, alignment with the school’s education program, and/or on students’ identified needs.

Study Design

The evaluation described in this document was conducted in late 2018 through early 2019 and included a subset of public schools and public-school students from across Washington State. Among the schools included in this study, 98 offered WRC tutoring as well as other LAP ELA services and 196 offered only other LAP ELA services.

This mixed-methods evaluation examined the impact of WRC on schools at which WRC Members are placed, using two different methods:

- 1) A *quasi-experimental design study*, in which quantitative program-level and student-level data was collected and analyzed to test whether schools at which WRC Members were placed to provide tutoring services during the 2017-18 school year showed statistically-significant differences in student reading growth (as measured by changes in assessment scores) compared with similar schools that did not have WRC Members.

This study was designed to answer the following question: *To what extent do months of growth differ between Tier 2 students who received a combination of WRC tutoring and other LAP ELA services and Tier 2 students who received only LAP ELA?*

If students in schools with WRC Members were shown to have greater reading growth than students in schools without WRC Members (i.e., those who received only other LAP ELA services), it could be inferred that the WRC program had a positive impact on student achievement.

- 2) A *case study*, in which qualitative data about WRC Members’ activities and staff perceptions of WRC’s impact was collected via phone interviews with staff at WRC service sites. The Site

Supervisors interviewed were selected randomly from a subsample of Site Supervisors at all schools that participated in WRC in the 2017-18 school year.

The interview questions were designed to answer the following question: *To what extent does the work of WRC Members impact the culture of reading in the school and in the local community?*

Interviews offered a deeper examination of the program's impact on the school and its students and staff.

Site Supervisors' answers to these questions helped to provide context for the quantitative student data analyzed and also pointed to further potential areas of inquiry to better understand WRC's impact on schools, students, and the local community.

A detailed description of each of these evaluation components appears below.

Quasi-Experimental Study of the Impact of WRC on Reading Growth

The quasi-experimental study was designed to measure the impact of WRC on reading growth and answer Research Question 1: *To what extent do months of growth differ between Tier 2 students who served by a combination of WRC tutoring and other LAP ELA services and Tier 2 students served only by other LAP ELA services?*

To answer this question, the study used multivariate matching to create two groups of students¹⁵ (a "treatment" group of students who received a combination of WRC tutoring and other LAP ELA services and a control group who received only other LAP ELA services, but not WRC tutoring) and then to compare reading growth for the two groups.

To provide a more in-depth analysis of impact, Research Question 1 was subdivided into two separate but related questions, each of which is addressed individually in the following discussion:

- ***Research Question 1a:*** *To what extent do months of growth differ between Tier 2 students served by WRC tutoring and LAP ELA (labelled WRC + LAP ELA in the analysis tables) and Tier 2 students served by only LAP ELA (labelled LAP ELA only in the analysis tables)?*
- ***Research Question 1b:*** *To what extent does the effect of WRC tutoring on reading growth differ by student demographics?*

Data Collection

To answer Research Question 1 (sub-questions 1a and 1b), the researchers obtained the following data files from the Washington State Office of Superintendent of Public Instruction (OSPI). These files spanned the 2017-18 school year.

- 1) A file detailing enrollment and demographic information for students at 2,386 elementary schools in Washington State.
- 2) A file indicating whether students participated in WRC tutoring and/or other LAP ELA services during the 2017-18 academic year.
- 3) A file containing student scores on reading/literacy assessments administered by sites.

¹⁵ Students included in the study were selected from among all Tier 2 students enrolled in public schools in Washington State during the 2017-18 academic year.

- 4) A file indicating whether students had a Free or Reduced-Price Lunch (FRPL) flag, which denotes eligibility for the federal Free or Reduced-Price Lunch program (a proxy for low-income status).
- 5) A file indicating whether students had an EL/LEP flag, which denotes eligibility for English Language Development services (an indication of status as an English Learner).

The specific variables that were used within each data file are displayed in Appendix A.

Because of the way data is collected and reported via the state's CEDARS longitudinal database, within a given data file, it was possible for a student to have more than one record associated with them if the student attended multiple schools during the 2017-18 school year. To resolve this issue, each student was linked to a single school of primary responsibility for the academic year in the following way:

- Only student records that had a primary school flag indicator labelled as "Yes" were kept.
- If a student was associated with multiple primary schools of responsibility, the record that had the earliest school enrollment date and the highest value of cumulative days present was kept.

Applying the above restrictions reduced the data to a single record per student.

School and Student Selection

School Selection

Schools were selected for inclusion in the study via multivariate matching, through which WRC schools were matched to comparison (non-WRC) schools that were characteristically similar. The characteristics on which the two groups of schools were matched are:

- 1) Whether the school had at least one student in the school flagged as receiving LAP ELA services.
- 2) The proportion of the student body with an FRPL (Free or Reduced-Price Lunch) flag, indicating they were low-income students eligible for the federal FRPL program.
- 3) The proportion of the student body with an EL/LEP (English Learner/Limited English Proficiency) flag, indicating they were identified as English Learners eligible to receive English Language Development services.

This matching procedure used a 1-to-2 ratio of WRC schools to comparison (non-WRC) schools and yielded a final sample of 294 schools, with 98 WRC and 196 comparison schools. The results of the multivariate matching procedure (displayed in Table 1, below) produced a sample of characteristically-similar WRC and comparison schools.

Prior to matching, the characteristics of interest for WRC schools were not closely reflected by those of the comparison schools: WRC schools had 57.6% students with an FRPL flag, compared with 47.5% at comparison schools and WRC schools had 14.0% students with an EL/LEP flag, compared with 10.2% at comparison schools.

After matching, the characteristics of interest for WRC schools were much more closely reflected by those of the comparison schools: WRC schools had 57.6% students with an FRPL flag, compared with 57.9% at comparison schools; and WRC schools had 14.0% students with an EL/LEP flag, compared with 13.0% at comparison schools.

Table 1: Results of Multivariate Matching for School Selection

Matching Variable	Pre-Matching		Post-Matching	
	WRC Schools	Non-WRC Schools (Comparison)	WRC Schools	Non-WRC Schools (Comparison)
Proportion of students with FRPL flag	0.576	0.475	0.576	0.579
Proportion of students with EL/LEP flag	0.140	0.102	0.140	0.130

Numbers in the table above represent average values.

Student Selection

After matching WRC and comparison (non-WRC) **schools**, the researchers then used the multivariate matching process to match WRC and comparison (non-WRC) **students**. To be considered for multivariate matching, students must have met all of the following criteria:

- 1) Been enrolled in Kindergarten or grade 1, 2, 3, or 4.
- 2) Either attended a WRC school and received **both** WRC tutoring and other LAP ELA services OR attended a non-WRC school (selected in the previous matching process) and received **only** other LAP ELA services.
- 3) Had a valid score for their baseline assessment.
- 4) Had a student record that contained complete data indicating whether they received WRC and/or other LAP ELA services.

Of the students whose records were examined, 10,989 fit the above criteria. The variables that were used for multivariate matching are displayed in Appendix B.

Students were matched on their baseline assessment score,¹⁶ grade level, and eligibility for Free or Reduced-Price Lunch (FRPL). Using a 1-to-2 matching ratio of WRC students (attended a WRC school and received both WRC tutoring and other LAP ELA services) to comparison students (attended a non-WRC school and received only other LAP ELA services) multivariate matching yielded a final sample of 5,457 students, with 1,840 WRC students and 3,617 comparison students. An additional 5,532 students were unmatched (64 WRC students and 5,468 comparison students) and were, therefore, excluded from the analysis.

The results of the multivariate matching procedure (displayed in Table 2 below) produced a sample of characteristically-similar WRC and comparison students.

Prior to matching, the characteristics of interest for the WRC students were not closely reflected by those of the comparison students. For example:

- 71.7% of WRC students were flagged as FRPL-eligible, compared with 74.3% of comparison students.

¹⁶ Because schools use different student assessments that contain different score ranges, the baseline assessment score variable was rescaled to have a mean of zero and standard deviation of 1 within each grade level and assessment combination.

- 25.9% of WRC students were in Kindergarten, compared with 15.8% of comparison students.
- 13.2% of WRC students were in Grade 4, compared with 20.9% of comparison students.
- WRC students had an average baseline score of 0.304, compared with -0.074 for Comparison students.

After matching, the characteristics of interest for the WRC students were much more closely reflected by those of the comparison students. For example:

- 71.8% of WRC students were flagged as FRPL-eligible, compared with 71.4% of comparison students.
- 25.6% of WRC students were in Kindergarten, compared with 22.3% of comparison students.
- 13.5% of WRC students were in Grade 4, compared with 13.8% of comparison students.
- WRC students had an average baseline score of 0.052, compared with 0.109 for Comparison students.

Table 2: Results of Multivariate Matching for Student Selection

Matching Variable	Pre-Matching		Post-Matching	
	WRC Students	Non-WRC Students (Comparison)	WRC Students	Non-WRC Students (Comparison)
FRPL Flag	0.717	0.743	0.718	0.714
Grade Level K	0.259	0.158	0.256	0.223
Grade Level 1	0.223	0.215	0.222	0.224
Grade Level 2	0.213	0.200	0.213	0.227
Grade Level 3	0.173	0.218	0.174	0.188
Grade Level 4	0.132	0.209	0.135	0.138
Assessment Pre-score (scaled)	0.304	-0.074	0.052	0.109

Numbers in the table above represent average values.

Analysis of Data

Research Question 1a

Before analyzing the data for Research Question 1a (*To what extent do months of growth differ between Tier 2 students served by WRC tutoring and LAP ELA and Tier 2 students served by **only** LAP ELA?*), the researchers hypothesized that they would find a positive, statistically-significant relationship between the school-level WRC treatment variable and student reading growth. This positive relationship would suggest that, on average, students who received both WRC tutoring and other LAP ELA services would demonstrate higher growth than students who received only other LAP ELA services.

Research Question 1a was answered by fitting a series of multilevel regression models,¹⁷ one for each grade, using the *lme* function in the *nlme* package for the statistical programming language R.¹⁸

The models took the form below:

$$Y_{ij} = \beta_{0j} + \beta_{1j}X_{1ij} + \sum \beta_{pj}X_{pij} + e_{ij} \quad \text{Student-level}$$

$$\beta_{0j} = \gamma_{00} + \gamma_{01}W_{1j} + b_{0j} \quad \text{School-level}$$

$$\beta_{1j} = \gamma_{10} \quad \text{School-level}$$

Where:

- Y_{ij} is the reading growth score for student i in school j .
 - β_{0j} is the average growth score for school j .
 - β_{1j} is a coefficient reflecting the relationship between a student-level variable X_{1j} (e.g. student's ethnicity) and the growth score for that student.
 - γ_{00} is the overall average growth score.
 - γ_{10} is a coefficient reflecting the relationship between the school-level variable W_{1j} (whether school provided WRC tutoring) and the growth score for that student.
- and
- γ_{01} is a coefficient reflecting the relationship between the school-level variable W_{1j} (whether school provided WRC tutoring) and the growth score for that school.

The five grade-specific multilevel regression models used to answer research question 1a included the following student-level variables:

- Baseline assessment score.
- Ethnicity.
- Gender.
- Eligibility for Free or Reduced-Price Lunch (FRPL).
- Eligibility for English Language Development services (EL/LEP students).

¹⁷ Multilevel regression is a statistical technique that takes into account when data are nested (e.g., students are nested within schools). Failing to take into account nesting can result in incorrect statistical significance tests. Raudenbush, S. W., & Bryk, A. S. (2002). Hierarchical linear models: Applications and data analysis methods (Vol. 1). Sage.

¹⁸ R is an open-source statistical software program and much of its utility is derived by installing packages that have a set of tools (functions) for performing data transformations and analyses.

The model also used the following school-level variables:

- Whether the school provided both WRC tutoring **and** other LAP ELA services or **only** other LAP ELA services.
- The school's percentage of students eligible to receive Free or Reduced-Price Lunch (FRPL).
- The school's percentage of students eligible to receive English Language Development services (EL/LEP students).

Research Question 1b

Before analyzing the data for Research Question 1b (*To what extent does the effect of WRC tutoring on reading growth differ by student demographics?*), the researchers hypothesized that FRPL-eligible students and students of color who received WRC tutoring would, on average, have higher reading growth than their counterparts (FRPL-ineligible students and white students who received WRC tutoring). That is, it was anticipated that the benefits of WRC tutoring would be greater for these traditionally-underserved students, relative to their peers.

Research question 1b was answered by fitting the same multilevel regression models as in question 1a, above, but also included an interaction term between the ethnicity variable and the WRC treatment variable, as well as an interaction term between the FRPL variable and the WRC treatment variable. The introduction of the interaction terms allows for the ability to test if differences in months of reading growth occur as a function of *both* the treatment that students receive (a combination of WRC tutoring and other LAP ELA services or other LAP ELA services only) as well as the student's demographic characteristics (i.e., low-income status, as indicated by eligibility for the FRPL program, or ethnicity).

The next section of this report presents the results of these analyses.

Results

Research Question 1a

The answer to Research Question 1a (*To what extent do months of growth differ between Tier 2 students served by WRC tutoring and LAP ELA and Tier 2 students served by only LAP ELA?*) is that no statistically-significant differences in months of reading growth were found between Tier 2 students who received WRC tutoring and other LAP ELA services (*WRC + LAP ELA*) and students who received only other LAP ELA services (*LAP ELA ONLY*).

Among WRC + LAP ELA students and LAP ELA ONLY students, a similar percentage achieved at least 10 months of reading growth:

- Among the 1,840 WRC + LAP ELA students in the study, 45.2% achieved at least 10 months of reading growth.
- Among the 3,617 LAP ELA ONLY students, 48.5% achieved at least 10 months of reading growth.

Both of these percentages are within the expected range of success for students who have been assessed through pre-program screening as "below benchmark," but not "well below benchmark" – i.e.,

Tier 2 students.¹⁹ This data, however, shows no additional impact for WRC tutoring beyond the impact for LAP ELA over all. This lack of a demonstrated difference does not necessarily mean WRC tutoring does not have an additional impact: Challenges related to the way data is entered, flagged, and reported (as discussed in the “Limitations” section) may be obscuring the impact the program has and further study is needed.

The authors fit a total of five different grade-specific multilevel models to test research question 1a. The results of the models fit suggested that, while WRC tutoring was unrelated to months of reading growth, two specific student characteristics were negatively associated with growth in reading: (1) student baseline scores, and (2) student eligibility for Free or Reduced-Price Lunch (FRPL).

After controlling for the other variables in the model, both of these characteristics were found to be predictive of less reading growth:

- Students who had higher baseline assessment scores achieved fewer months of reading growth than students who had lower baseline assessment scores. This relationship is likely explained by the fact that students with higher scores at baseline tend to have less room for improvement in their scores.
- Students who were FRPL-eligible achieved fewer months of reading growth compared to students who were ineligible for FRPL. This relationship is likely explained by the lack of reading resources available outside the classroom to support growth for many FRPL-eligible children.

Other demographic characteristics such as ethnicity, gender, and eligibility for English Language Development services (EL/LEP students) were generally not predictive of months of growth. For nearly every grade-specific model, the school-level variables (percentage of students eligible for FRPL and percentage students eligible for English Language Development services) were not statistically significant, suggesting that school-level demographics were generally unrelated to reading growth.

Table 3, below, presents the results from the multilevel models used. In the table, only cells containing an asterisk (“*”) indicate that a variable had a p-value of < .05 (i.e., was a statistically-significant predictor of months of reading growth for a particular grade level). As the table shows, the treatment variable *WRC + LAP ELA* was not statistically significant for any of the grade-level models even after controlling for other student and school variables.

Table 3: Regression Summary for the Multilevel Models Assessed, Research Question 1a

To what extent do months of growth differ between Tier 2 students served by WRC tutoring and LAP ELA and Tier 2 students served by only LAP ELA?

Variable	Grade K1	Grade 1	Grade 2	Grade 3	Grade 4
(Intercept)	7.80* (1.34)	10.39* (1.18)	13.26* (1.29)	13.33* (1.15)	11.08* (1.38)
Scaled Assessment Pre-score	-1.26* (0.20)	-0.05 (0.17)	-0.26 (0.18)	-0.70* (0.23)	-1.03* (0.33)
WRC + LAP ELA	0.47 (0.78)	-0.12 (0.70)	0.19 (0.76)	-0.02 (0.61)	0.25 (0.78)
American Indian/Alaskan Native	-2.00* (0.78)	-0.47 (1.01)	0.45 (1.06)	-1.04 (1.14)	-0.98 (1.34)

¹⁹ DIBELS Next Benchmark Goals and Composite Score. Dynamic Measurement Group, Inc. 2010. WRC serves Tier 2 students who have scored “below benchmark” on assessments and who, thus, have a 40% to 60% likelihood of achieving literacy goals.

Variable	Grade K1	Grade 1	Grade 2	Grade 3	Grade 4
Asian	-1.31 (0.97)	-0.51 (1.07)	1.34 (1.09)	0.19 (1.45)	0.92 (1.33)
Black/African American	-1.05 (0.77)	0.16 (0.87)	-0.12 (0.90)	0.11 (1.06)	-1.88 (1.33)
Hispanic/Latino of any race(s)	-0.19 (0.36)	-0.90 (0.47)	-0.63 (0.48)	-0.60 (0.56)	-0.29 (0.67)
Native Hawaiian/Other Pacific Islander	0.02 (1.12)	-1.25 (1.92)	0.29 (1.79)	-1.53 (2.18)	2.64 (2.11)
Two or More Races	-0.21 (0.51)	-0.60 (0.65)	0.81 (0.70)	0.46 (0.79)	-0.12 (0.97)
Male	-0.27 (0.24)	0.18 (0.31)	0.01 (0.32)	-0.02 (0.39)	0.38 (0.46)
EL/LEP (yes)	0.42 (0.34)	0.65 (0.45)	0.03 (0.44)	0.31 (0.52)	-1.71* (0.63)
FRPL (yes)	-0.71* (0.28)	-0.92* (0.39)	-0.47 (0.41)	-1.16* (0.50)	0.68 (0.57)
School Proportion FRPL-Eligible Students	1.63 (2.51)	-1.76 (2.24)	-4.68 (2.51)	-6.12* (2.12)	-3.43 (2.64)
School Proportion EL/LEP Students (Eligible for English Language Development Services)	1.56 (2.87)	3.29 (2.55)	-0.41 (2.81)	4.15 (2.25)	1.47 (2.82)

Cell values are presented in the format Estimate-Significance-Standard Error. An "*" denotes statistical significance ($p < .05$).

It is important to note that the schools included in the sample used a wide variety of different assessments to determine reading growth for students over the school year. Specifically, it is unclear whether the various assessments used across schools measure the same constructs, have similar psychometric properties, and/or perform similarly in their capacity to measure a student's reading ability at baseline. The inconsistency in and lack of clarity around the constructs, psychometric properties, and performance of assessments poses a threat to the validity of this study and limits the conclusiveness of the results. This threat is discussed in more depth in the section *Limitations on Data Analysis for the Quasi-Experimental Study*, which starts on page 20.

In order to mitigate this threat, the researchers performed a sensitivity analysis in which the sample was restricted to students who took the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) assessment. DIBELS was the assessment administered to the largest number of both WRC and non-WRC students in the sample. Eighty schools and 1,194 students (398 WRC students, 796 non-WRC students) were included in this sensitivity analysis. The results of this analysis also suggested that there was no relationship between receiving both WRC tutoring and LAP ELA and higher reading growth relative to receiving only LAP ELA.

The researchers also analyzed the association between months of growth in reading and the length of time that elapsed between a student's baseline score and their final score. The researchers assessed the relationship between reading growth and time elapsed between assessments by including a "time between assessments" variable in the grade-specific multilevel models fit for research question 1a. Even after controlling for time between assessments, the models indicated no relationship between receiving both WRC tutoring and other LAP ELA services and higher months of growth in reading compared to receiving only LAP ELA services. Appendix B presents bar charts and tables displaying average months of reading growth by specific demographic characteristics.

Research Question 1b

The answer to Research Question 1b (*To what extent does the effect of WRC tutoring on reading growth differ by student demographics?*) is that the effect of WRC tutoring on reading growth did not differ by student demographics.

The results for the models fit for research question 1b closely resemble the results for the results for research question 1a. Baseline assessment score and FRPL eligibility were again generally predictive of months of growth in reading, where higher baseline scores were associated with reduced growth and FRPL-eligible students achieved fewer months of growth compared to FRPL-ineligible students. As in research question 1a, receiving WRC tutoring was not a statistically-significant predictor of reading growth, as no statistically-significant difference in months of reading growth was found between students who received both WRC tutoring and LAP ELA services compared to students who received only LAP ELA.

Table 4, below, presents the results from the multilevel models used to answer Research Question 1b. Cells containing an "*" indicate that a variable was a statistically-significant predictor of months of reading growth for a particular grade level. As the table shows, the treatment variable (WRC + LAP ELA) was not statistically significant for any of the models.

Table 4: Regression Summary for the Multilevel Models Assessed, Research Question 1b

To what extent does the effect of WRC tutoring on reading growth differ by student demographics?

Variable	Grade K1	Grade 1	Grade 2	Grade 3	Grade 4
(Intercept)	4.17* (1.37)	10.39* (1.21)	12.60* (1.31)	13.20* (1.17)	6.77* (1.67)
Scaled Assessment Pre-score	-0.96* (0.20)	-0.06 (0.17)	-0.23 (0.18)	-0.68* (0.23)	-0.91* (0.33)
WRC + LAP ELA	0.39 (0.86)	-0.28 (0.95)	-0.46 (1.01)	0.55 (1.00)	0.98 (1.22)
American Indian/Alaskan Native	-1.58 (1.15)	0.93 (1.85)	3.23 (1.67)	0.41 (2.26)	-0.73 (2.28)
WRC + LAP ELA: American Indian/Alaskan Native	-0.89 (1.54)	-2.55 (2.21)	-4.57* (2.16)	-2.33 (2.60)	0.42 (2.81)
Asian	-1.12 (1.34)	-0.55 (1.22)	1.01 (1.14)	0.80 (1.83)	-0.47 (1.52)
WRC + LAP ELA: Asian	-0.27 (1.90)	0.40 (2.54)	4.42 (4.26)	-1.45 (3.01)	5.06 (2.92)
Black/African American	0.60 (1.06)	0.34 (0.94)	-0.08 (1.00)	0.78 (1.22)	-2.21 (1.48)
WRC + LAP ELA: Black/African American	-2.87 (1.53)	0.35 (2.56)	-0.47 (2.34)	-1.76 (2.46)	1.13 (3.31)
Hispanic/Latino of any race(s)	-0.02 (0.44)	-0.49 (0.54)	-0.60 (0.57)	0.08 (0.67)	-0.75 (0.77)
WRC + LAP ELA: Hispanic/Latino of any race(s)	-0.52 (0.68)	-1.48 (0.92)	-0.26 (0.90)	-1.91 (1.07)	1.21 (1.30)
Native Hawaiian/Other Pacific Islander	0.06 (3.33)	-2.00 (2.05)	0.78 (2.28)	NA	3.02 (2.22)
WRC + LAP ELA: Native Hawaiian/Other PI	0.15 (3.53)	8.31 (6.05)	-1.50 (3.68)	NA	-5.86 (6.68)
Two or More Races	-0.46 (0.72)	-0.17 (0.77)	0.43 (0.85)	0.82 (0.99)	-0.64 (1.23)
WRC + LAP ELA: Two or More Races	0.43 (1.00)	-1.39 (1.42)	1.10 (1.48)	-1.01 (1.65)	1.06 (1.99)
Male	-0.27 (0.23)	0.17 (0.31)	-0.03 (0.32)	0.02 (0.40)	0.41 (0.46)

Variable	Grade K1	Grade 1	Grade 2	Grade 3	Grade 4
EL/LEP (yes)	0.51 (0.34)	0.74 (0.45)	0.04 (0.44)	0.44 (0.54)	-1.74* (0.63)
FRPL (yes)	-0.83* (0.36)	-1.28* (0.48)	-0.74 (0.49)	-1.36* (0.63)	1.10 (0.69)
School Proportion FRPL-eligible Students	1.37 (2.33)	-1.79 (2.25)	-4.39 (2.49)	-6.26* (2.12)	-3.58 (2.60)
EL/LEP Students (eligible for English Language Development Services)	1.70 (2.65)	3.38 (2.57)	-0.24 (2.79)	3.85 (2.25)	2.29 (2.76)
Months Between Assessments	0.57* (0.08)	0.00 (0.00)	0.09* (0.03)	NA	0.55* (0.13)
WRC + LAP ELA: FRPL flag Y	0.29 (0.56)	1.10 (0.84)	0.99 (0.86)	0.46 (1.04)	-1.85 (1.20)

Cell values are presented in the format Estimate-Significance-Standard Error. An "*" denotes statistical significance ($p < .05$). NA values indicate insufficient data.

Appendix B presents additional charts and tables displaying average months of reading growth by treatment and by specific demographic characteristics.

Limitations on Data Analysis for the Quasi-Experimental Study

The analysis of data on the impact of WRC on reading growth in the quasi-experimental study has several major limitations, each of which is described below. A discussion of recommended changes to address these limitations appears in the section *Recommendations*, which starts on on page 29.

First Limitation

Because of variation in the way schools collect data on the key outcome of interest for this study (reading growth), it was difficult to set a standard measure for that outcome.

Washington is a "local control" state, meaning that each of its 295 school districts makes autonomous decisions about a wide range of policies, procedures, programs and curricula, and assessment and evaluation. Because of the local control structure, school districts have the freedom to determine which assessments they use to measure student performance, and the schools in this study used a wide range of different tools to assess student reading growth. Assessment tools used appear to not only measure different constructs (e.g., fluency, comprehension, etc.) but also to have different psychometric properties, and to use different score ranges to report growth.

As a form of sensitivity analysis, the authors had hoped to select a subset of WRC and LAP ELA + WRC students from the sample who took a common reading assessment. Because of the wide variety of assessments used in the schools included in this study, however, it was not possible to identify a common reading assessment -- or even one that was used by a majority of schools in the study. Nineteen different assessments were used to measure reading growth for the students included in the study and no individual assessment was used by more than 20 percent of the schools studied, making it impossible to identify a reading assessment that could be considered "common."

Had it been possible to identify a common reading assessment, the researchers could have matched students based on that assessment, thus strengthening the power to detect a significant difference in the treatment effect.

To address the issue of multiple assessment score ranges (due to the schools' use of different reading assessments with different scoring protocols), the researchers converted the scores for all assessments

to the same scale, using a z-score transformation. The baseline assessment score variable was rescaled to have a mean of zero and standard deviation of 1 within each grade level and assessment combination.

However, to the extent that all of the assessments used by WRC schools and comparison (non-WRC) schools measure different constructs (i.e., phonemic awareness, vocabulary, fluency, comprehension, etc.), the transformation to z-scores could adversely affect the credibility of the treatment effect estimate. In addition, issues related to variations in the treatment provided could also adversely affect that credibility (see “Third Limitation,” below).

This limitation points to the need for a common reading assessment for WRC sites.

Second Limitation

Because of inconsistencies in the way schools recorded, reported, and flagged data in the CEDARS database, it was difficult to ensure (a) that the assignment of students to the “treatment” or “control” groups accurately reflected whether they had actually received either WRC tutoring and other LAP ELA services or only other LAP ELA services and (b) that the growth score reported for each student accurately reflected the growth that student made.

These challenges included the following

- (a) Lack of clarity, detail, and consistency in the data flagging system about which students received WRC tutoring **and** other LAP ELA services and which received **only** other LAP ELA services.

In the State’s CEDARS data system, schools may be flagged as offering WRC tutoring, other LAP ELA services, or both. However, because WRC tutoring is considered to be a best practice as defined by the LAP ELA Menu of Best Practices (described earlier), it appears that some schools flagged as providing both WRC tutoring AND other LAP ELA services may in fact have offered WRC tutoring as their LAP ELA service. It is possible, therefore, that a student whose data flag indicated they received both WRC tutoring and other LAP ELA services may actually have received only WRC tutoring rather than WRC tutoring plus a different LAP ELA intervention.

In addition, it is possible that the non-WRC schools included in the study may have used their LAP ELA funds to offer tutoring that is essentially similar to that offered by WRC but is provided by an adult other than a WRC Member.

These misspecifications call into question the treatment effect estimate produced by the multilevel regression models, which used these data flags to identify which students were to be included in the “treatment” group (students who received both WRC tutoring and other LAP ELA services) and in the control group (those who received only other LAP ELA services).

- (b) Inconsistency and/or errors in data entry.

In many of the student data files, the outcome of interest for this study, months of reading growth, had misspecified values entered. For example, in some records, students were labelled as having **negative** months of growth, even though their assessment scores showed gains from baseline assessment to final assessment. The misspecified values in the months of reading growth field likely contributed to a confounded treatment effect estimate.

This limitation points to the need for more clarity around the flags that indicate which services students receive as well as a way to prevent or rectify inconsistencies and errors in data entry.

Third Limitation

WRC directs all sites to provide tutoring one-on-one or in small groups at least three times weekly for at least 15 minutes each session, for a minimum of six weeks. Not all sites, however, adhere strictly to those directions all the time or with every student. Not only does the dosage provided by WRC Members tend to vary across schools, based on local logistics and student-identified needs, because Washington is a local control state (as discussed earlier) considerable variation also exists in the structure and content of tutoring.²⁰ Given this variability, the services defined as “treatment” for WRC students was inconsistent across schools and, thus, the subsequent treatment effect estimate produced by the multilevel regression models may be misleading.

In addition, even if all WRC schools used a common assessment and that assessment suggested impact for the “treatment” of WRC tutoring, the variability across sites in what WRC tutoring consists of would make it difficult to identify what is driving the impact. Any one of the following aspects of WRC tutoring could be correlated with impact: the tutoring model (e.g., pull-out or push-in), specific literacy and reading tutoring strategies, or simply having another adult supporting students’ literacy development.

This limitation points to the need for more consistency in the ways in which sites implement the WRC model.

Fourth Limitation

Because the state does not require data on students who do not receive extra intervention to be reported to CEDARS, it is not possible to compare students who receive WRC tutoring with students who do not receive any LAP ELA intervention. Because the students who receive no intervention are not identified, it is impossible to create a “no intervention” group for comparison purposes.

This limitation points to the need to determine a way to identify a large group of students who receive WRC tutoring and a large group of similar students who receive neither WRC nor other interventions.

Case Study of the Impact of WRC on Reading Culture

The case study was designed to measure the impact of WRC at schools where WRC Members are placed and answer Research Question 2: *To what extent does the work of WRC Members impact the culture of reading in the school and in the local community?*

To address this question, the study collected qualitative data about WRC Members’ activities and staff perceptions from a subsample of schools that have hosted WRC Members in the past to provide tutoring.

²⁰ Differences in tutoring structure include whether sessions are “push-in” (i.e., tutoring is provided in the classroom, concurrent with regular reading instruction) or “pull-out” (i.e., students are pulled out of the classroom for tutoring session) as well as whether tutoring is provided individually or in small groups; differences in content include both whether or not tutoring is aligned with a particular classroom curriculum and which of multiple core reading skills are supported (e.g., fluency, vocabulary, or comprehension); differences in dosage include variability in frequency, duration, and intensity of tutoring sessions.

Data Collection

To answer Research Question 2, the researchers designed an interview tool to gather qualitative data from Site Supervisors about WRC Members and their service. Designed in partnership with key staff members from WRC, the interview tool included questions for WRC Site Supervisors (the individuals responsible for overseeing WRC Members' efforts) designed to elicit information about the specific services provided by the WRC Members placed at their site and their perceived impact. Interview topics included the role of WRC Members in (a) recruiting and training literacy volunteers from the community, (b) facilitating literacy events and activities, and (c) participating in other activities that impact the school's reading culture. The interview questions are included in the Appendices, on page 41.

The Site Supervisor at each WRC school in the sample was invited to participate in a one-hour telephone interview with a researcher from the evaluation team. Invitations were sent via email and included a description of the evaluation and the purpose of the interviews.

The Site Supervisors received a copy of the interview questions in advance in order to give them an opportunity to prepare thoughtful responses and to gather information from other staff involved with WRC Member activities. Using the interview questions as a guide, the researchers gathered information about the Site Supervisors' perception of the WRC Members' impact on student reading growth, on reading culture in the school and local community, and on family and community engagement with the school, among other topics.

Interviews were conducted in November and December of 2018 and were recorded, with the permission of the interviewees, then transcribed, coded, and analyzed. After completion of the four interviews, the audio recordings were transcribed to Word documents. The content of the interviews was examined and emergent themes were identified.

School Selection

The researchers used stratified random sampling to select four schools from a population of 31 service sites across the state that had at least three years' experience hosting a WRC Member to provide tutoring for students.

The stratified random sampling procedure used geographical region as the strata, selecting one school from each region (East, Northwest, Seattle-Tacoma-Olympia, and Southwest).

Analysis of Data

Research Question 2 was answered by analyzing the themes that emerged in the transcripts of the coded interviews. Because of the small number of interviews conducted, this analysis was able to be completed without the use of qualitative data analysis software. Instead, the researchers reviewed the transcripts, coded the content by themes, and created a table that summarizes responses from each of the interviewees for each of the themes. This table is included in the Appendices, on page 45.

The themes that were included in the analysis included:

- Supervisor background (responsibilities at the site, longevity with the site, experience with WRC, and experience supervising members).

- Member activities (the percentage of time members provide tutoring, other literacy services, family engagement activities, and work with community volunteers, and details about each of those activities)
- Tutoring details (the member:student tutoring ratio, the tutoring model, and other information about tutoring)
- Alternative service and partnerships (whether members engaged in alternative service, what that service consisted of, and what external partners the members worked with)
- WRC impact (supervisors' perceptions of the extent to which members helped improve student outcomes, helped improve the experience of community volunteers, helped increase the number of community volunteers, helped teachers do their job, and/or helped improve parent knowledge and skills).
- Impression of WRC (supervisors' perceptions of the WRC program as a whole and their impression of how WRC is perceived by teachers, students and families, and external partners).
- Impact on external partners (supervisors' perceptions of whether WRC Members make existing partnerships stronger and/or create new partnerships or programs)
- Other comments (supervisors' perceptions about the burden of paperwork involved in hosting a WRC Member, other challenges, and other positive aspects of WRC)

Results

The answer to Research Question 2 (*To what extent does the work of WRC Members impact the culture of reading in the school and in the local community?*) is that Site Supervisors perceive a significant, positive impact for WRC on the culture of reading at their schools. The evaluators found many common responses regarding the themes of interest in the Site Supervisor interviews.

Most importantly, all Site Supervisors expressed a high regard for the WRC program and for the members placed at their sites. Their praise for the program was consistent and effusive. As illustrated in the "Sample Quotes" in the analysis chart in Appendix D, the program is considered either extremely helpful or indispensable by the Site Supervisors and Site Supervisors feel that members help create a more "literacy friendly" environment at their sites. Furthermore, Site Supervisors also expressed the belief that other site staff, parents, and students hold the WRC program overall and the WRC Members in particular in similar high regard.

Site Supervisors also expressed the strong belief that WRC Members help improve reading growth for students (although they were able to offer only limited tangible evidence of that impact). It is important to note, however, that supervisor perceptions of improvements in student reading growth were not supported by the data analysis in the larger quasi-experimental study of impact on reading growth (described earlier in this report), which revealed no statistically-significant difference in months of reading growth between students who receive both WRC tutoring and other LAP ELA services and those who received only other LAP ELA services. This discrepancy is discussed further in the following section, *Limitations on the Data Analysis for the Case Study*.

In addition, three of the four Site Supervisors cited the burden of paperwork as an issue and noted that, while they still felt having Members is worth their time and effort, all the paperwork requirements create difficulties. The same three Site Supervisors each also indicated that they were aware of other

schools in their district that decided not to apply for a Member because of the paperwork. The fourth Site Supervisor didn't address this topic.

Other consistent themes:

- WRC Members tutor students both 1:1 and in small groups on a consistent basis, while community volunteers typically provide 1:1 tutoring only (usually episodic, rather than ongoing).
- WRC Members are both viewed as and treated as members of the school teaching staff – by teachers and parents alike.
- WRC Members provide much-needed support for teachers. By working with specific struggling students, they help teachers regain time for other teaching tasks, including supporting students with the greatest reading challenges.

While all Site Supervisors indicated that Members spend by far the largest amount of their time in direct tutoring services (between 75% and 90% of their time commitment), differences were noted in the amount of time Members spend on:

- Other student-focused literacy supports, such as before and after school literacy activities.
- Family engagement activities, including family literacy nights.
- Volunteer management and recruitment.

Sites also differ in:

- The primary model used for tutoring. Two Site Supervisors indicated their sites use a pull-out model, in which students to be tutored are removed from the classroom for tutoring, and two indicated a push-in model, in which tutoring occurs in the classroom during classroom instruction.
- Members' level of autonomy in and responsibility for providing tutoring. At one site, Members help teachers and paraprofessionals plan and implement services; at others, they implement only those activities that teachers direct them to carry out.
- Members' level of autonomy in and responsibility for providing other literacy-focused student and family activities. At some sites, Members drive the planning and implementation process; others help implement activities that are planned by school staff or groups like the PTA.
- Whether community volunteers also provide tutoring and whether Members are involved in recruiting and training community volunteers or in coordinating their work.
- Whether Members engage with community partners, create new partnerships, or strengthen existing ones.

One Site Supervisor noted the impact of the program on sparking Members' interest in the teaching profession. The same Site Supervisor also indicated that having WRC helped reinforce the idea that the district was working hard to help students, making parents more likely to vote in favor of funding levies than if they thought the district wasn't adequately addressing problems ("if you perceive that nothing is being done").

One Site Supervisor also noted a performance issue with one of the Members but indicated that having difficulties with Members is a deviation from the norm and another Site Supervisor indicated that they have had to release members from service in the past, but for the most part Members fit in really well at the school.

In short, the following quotes encapsulate the feelings of the Site Supervisor interviews: We love the Washington Reading Corps program! You're really getting a good bang for your buck!

Site Supervisor Interview Content Analysis details by site are provided in a chart in the Appendix. The code numbers and descriptions (code book) appear after the analysis chart.

Limitations on the Data Analysis for the Case Study

The analysis of data on the impact of WRC on reading culture has several major limitations, each of which is described below. A discussion of recommended changes to address these limitations appears in the section Recommendations, which starts on page 29.

First Limitation

The first limitation on data analysis for the case study was the timing of the interviews, which were required to be completed prior to the availability of data analysis from the larger quasi-experimental study. As a result, questions that might have been asked about the discrepancy between Site Supervisors' perceptions of impact on reading growth and the results from the quasi-experimental study indicating no differences between WRC and non-WRC students were not included. In the absence of specific questions, difficult to speculate about how Site Supervisors might reconcile the discrepancy between their perceptions of student reading growth and what the data suggested.

Second Limitation

The second limitation on this analysis was the small number of Site Supervisors interviewed (four). Resource limitations meant that interviewing a larger pool of Site Supervisors was not feasible at the time the study was conducted. Because of the small number of Site Supervisors included in the case study, it is difficult to extrapolate findings to the majority of WRC sites or to know the extent to which the perspectives expressed in the four interviews are representative of the perspectives of the majority of Site Supervisors across the state.

Discussion of Limitations

A number of possible explanations exist for the discrepancy between Site Supervisor perception of the impact of WRC tutoring student reading growth and what the quantitative data suggests about that impact:

- (1) The impact of the program was hidden by the inconsistencies in data entry, data flagging, and data reporting outlined earlier (the "signal" of impact could not be heard through the "noise" of data inconsistencies).

This possibility points to the need for improvements in data entry, data flagging, and data reporting to reduce noise, so that the signal of impact is clearer.

- (2) The perception of the four Site Supervisors interviewed may not be representative of the larger universe of Site Supervisors and the perceptions of the larger group of Site Supervisors may be more mixed and may more closely reflect the outcomes of the quasi-experimental study, which

did not establish a statistically-significant difference in reading growth between the treatment group and the control group in the quantitative study.

This possibility points to the need to survey and/or interview the larger group of Site Supervisors about their perceptions of impact. Results from a survey could be used to design a targeted interview tool that delves more deeply into the question of perceived vs actual impact on reading growth and that gathers additional information about the value of WRC.

- (3) Time and resource limitations precluded separate analysis comparing actual reading growth for students at the four schools included in the interviews with Site Supervisor perceptions. The four schools represented in the interviews may have had student reading-growth outcomes that were different from the overall average in the larger quasi-experimental study.

This possibility points to the need to compare quantitative and qualitative analyses by site, to determine whether there is a link between Site Supervisors' perceptions and the reading growth of students at that particular site and, again, to delve more deeply into the question of value beyond reading growth if no link between perception of growth and data demonstrating growth is found.

- (4) Because of data-flagging issues, it is difficult to know what other interventions students received, in addition to WRC tutoring. However, because the analysis of quantitative data didn't make these issues evident until after the interviews were conducted, interview questions did not ask about whether WRC tutoring was the only intervention students received. As a result, it is unclear whether students received other tutoring in addition to WRC tutoring or other non-tutoring interventions aimed at improving reading growth. This lack of clarity makes it difficult to know if the impact Site Supervisors say they perceived resulted from a combination of interventions or WRC tutoring alone. In addition, because it is not possible to compare WRC tutoring to "no intervention," Site Supervisors' perceptions were likely based on what they believed would have happened for students in the absence of any intervention.

This possibility points to the need (a) for future surveys and/or interviews that ask more in-depth and targeted questions about other interventions and (b) to resolve issues around data collection, as discussed earlier. It also highlights the need to conduct a study that compares students who receive WRC tutoring with similar students who receive neither WRC tutoring nor another similar tutoring intervention. Such a study would require a method of data flagging that clearly identifies which interventions students are receiving.

- (5) The placebo effect is common in the social sciences, as in medicine. When people believe an intervention is supposed to have an impact, they will perceive that impact subjectively, even in the absence of objective data that supports their perception. Furthermore, the supervisors may have answered the question about impact on student reading growth as they were thinking more about the overall value of the program to their site.

This possibility points to the need to design more specific survey or interview questions about program value to sites.

Conclusions and Implications

Conclusions

In summary, this study resulted in three key findings:

- 1) No statistically-significant differences in months of reading growth were found between students who received a combination of WRC tutoring and other LAP ELA services and students who received only other LAP ELA services. The results of the models suggested that neither receiving a combination of WRC tutoring and other LAP ELA services nor receiving only other LAP ELA services was predictive of students' reading growth.
- 2) The effect of WRC tutoring on reading growth does not differ significantly by student demographics, such as income status (as indicated by eligibility for the federal Free or Reduced-Price Lunch program) or ethnicity. The results of the models suggested no significant differences in the effect of the combination of WRC tutoring and other LAP ELA services compared with only other LAP ELA services by either student income status (eligibility for Free or -Reduced- Price Lunch program) or ethnicity.
- 3) Site staff at schools where WRC Members are placed perceive a significant, positive impact for WRC on the culture of reading at their schools. Site Supervisors interviewed expressed a high regard for the WRC program and for the members placed at their sites. Their praise for the program was consistent and effusive.

While the case study indicated that site staff perceive significant value in the service WRC Members provide, the results of the quasi-experimental study did not directly support those perceptions and the quasi-experimental study did not show an impact for WRC compared with LAP ELA.

The reason researchers were unable to find any difference in months of reading growth between students who received a combination of WRC tutoring and other LAP ELA services and students who received *only* other LAP ELA services, may include one or more of the following:

- 1) Variability in the tools that schools use to collect data on reading growth (the key outcome of interest for this study).
- 2) Inconsistencies in the way data was entered, collected and/or flagged that masked the treatment effect (i.e., an effect exists but was undetectable because of corrupted or inconsistent data collection, reporting, or flagging processes) because it was difficult to ensure the accurate assignment of students to the "treatment" or "control" groups or to verify that the growth score reported for each student accurately reflected the growth that the student made.
- 3) Inconsistencies in the tutoring models provided, which would make it difficult to establish causation even if an effect were detected.
- 4) The absence of a "no intervention" control group, which made it impossible to compare growth data for students who received WRC tutoring with students who received no additional intervention.
- 5) An actual lack of impact for the treatment (WRC tutoring) beyond the impact of other services students receive.

These challenges point to the need for further study to determine which of the factors above may be true. However, until the study limitations outlined earlier are resolved, it may be difficult to design a

study that can credibly determine the extent of WRC's impact on student reading growth or to determine which aspects of WRC tutoring may be more strongly correlated with reading growth.

Implications

The main implication of these conclusions is that, if WRC wants to accurately measure the impact of its tutoring interventions, the program should work to ensure each of the following:

- Less variability in the assessment tools used to measure reading growth. The best scenario would be to have one reading assessment tool that all WRC sites use.
- More clarity around the flags that indicate which services students receive. The best scenario would be to have a system that clearly indicates all of the reading interventions LAP ELA-funded schools provide (both WRC tutoring and other non-WRC LAP ELA interventions).
- A better system to rectify/prevent errors in data entry, so that values that are outside the range specified by assessment tools cannot be entered. Particularly if only one assessment were used across all sites, it should be relatively easy to create an electronic data collection system that would limit data entered in a specific field to a specific range of values and that could flag for review any instances in which post-program assessment scores were lower than baseline scores.
- More consistency in the ways in which sites implement the WRC model. The best scenario would be to have a single tutoring model (content, structure, and dosage) that all WRC sites implement.

It would also be helpful to find a way to identify a large group of students who receive WRC tutoring and a large group of similar students who receive neither WRC nor other interventions. This identification may not be possible within the state's longitudinal database, however.

A secondary implication of these conclusions is additional -- and more specific -- input from a much larger pool of site staff about the perceived value of the WRC program is needed. Furthermore, it would be helpful to compare differences in site staff perceptions with differences, if any, in student reading growth by site, to determine whether any correlation exists between each Site Supervisor's perception of impact and reading growth for that site.

This exploration could help determine what other student-level changes might be possible and valuable to measure in a separate quasi-experimental study regarding WRC Member impact (e.g., increased in overall school attendance, reductions in individual student absences, increases in students' feelings of connection to school, reports of improved school climate, increased parent engagement, etc.).

Recommendations

The researchers make the following recommendations to WRC, in order to help more clearly drive and measure impact for WRC tutoring.

Recommendations for Program Implementation and Data Collection

- (1) Standardize the WRC model and the assessments used to measure reading growth:
 - Identify a single valid, reliable, and easy-to-administer reading assessment and require all sites at which WRC Members are placed to use that assessment for all students who

receive WRC tutoring. Sites could continue to use other assessment in addition to the required assessment.

- Establish a core WRC tutoring model that outlines a specific content, structure, and dosage for tutoring services and require all sites at which WRC Members are placed to use that model for all students who receive WRC tutoring.
 - Establish other relevant measures of success, in addition to months of reading growth (e.g., reduction in student absences or disciplinary referrals, increase in student feelings of connection to school, etc.), create assessment tools for those measures.
- (2) Create and require the use of an electronic system (a) for WRC site staff to report on all member activities and (b) for individual WRC Members and community-based volunteers to report on tutoring provided, including electronic entry of assessment data to minimize errors in the entry and reporting of student assessment scores.

The specific attributes to be tracked in such a system should be decided in collaboration between WRC staff and other relevant parties (e.g., a software developer, an external evaluation consultant, and one or more site-based staff members), but could include items and events such as:

- The duration, content, and format of tutoring, tracked at each encounter between a WRC Member and a student and at each encounter between a community volunteer and a student (at sites that use community volunteers to extend WRC tutoring capacity).
 - The timing of and results from administration of screening and progress monitoring assessments, as well as the name of the assessment tool(s) used. The system should prevent entry of values outside a defined range to ensure the validity of the pre- and post-intervention scores entered.
 - Other specific activities members engage in (in addition to tutoring) and the timing and duration of those activities.
- (3) Work with the administrators of the CEDARS longitudinal database to create clearer ways to distinguish which students receive WRC tutoring, which students receive only other LAP ELA interventions, and which students receive both. In addition, the system should specify the LAP ELA intervention, so that it is clear whether that intervention is non-WRC tutoring or some other type of intervention.
- (4) Work with OSPI leadership to identify a control group of students who receive neither WRC tutoring nor other reading interventions but who are demographically similar to students who do receive WRC tutoring in order to more clearly demonstrate the impact of WRC tutoring.

Recommendations for Future Study

- (1) The researchers strongly recommend that WRC establish core tutoring model (consistent tutoring format, structure, content, and assessments) and pilot that model with a subset of program sites that agree to implement the model with fidelity. With a consistent model in operation across multiple sites, the researchers recommend designing and implementing a quasi-experimental study that would evaluate the impact of the standard model compared with the existing, non-standardized tutoring services WRC Members provide.

Implementing such a study would necessitate the recruitment of a sufficient number of WRC sites to participate in the pilot (ideally at least 20 sites) and recruiting a similar number of WRC sites that would not implement the new model but would agree to use the core model's assessment tool, either in place of or in addition to any other assessments used. With the second group of sites as a control, it would then be possible to compare the impact of the standardized WRC model to the impact of WRC's non-standardized tutoring services.

Creating a more standardized model (as Reading Corps programs in other states have done) provides a clearer way not only to measure the impact of a program but also to determine which particular aspects of a program are having the greatest impact.

- (2) The researchers also recommend either (a) changing the way WRC and other LAP ELA services are flagged in the CEDARS longitudinal data system or (b) creating some other reliable, electronic method to identify the specific interventions provided at the student level and then re-implementing substantially the same study

Being able to identify which students received WRC tutoring, other non-WRC LAP ELA tutoring, and other non-tutoring LAP ELA interventions would prevent students files from flagged in a duplicative way, which in turn would clear up confusion about which services have been provided to students and significantly reduce the threats to the validity of research outcomes, making it more likely that a second study could detect an impact for WRC tutoring, particularly if a single assessment was used across all sites studied.

- (3) In addition, the researchers recommend conducting a broader survey of site staff at all WRC sites, which would include questions from the interview tool created for the case study (described earlier) as well as about the following topics, with Likert-scale response values:
 - The format, content, and dosage of tutoring provided by WRC Members and by community volunteers (if any).
 - School-level data on reading growth as well as on other relevant student outcomes (student absences, feelings of connection to school, school climate, parent engagement, etc.).
 - Specific ways in which site staff perceive that WRC Members add value at their site and in their community.

Comparing the results of those surveys on a site-by-site basis to measures of reading growth could help determine correlations between specific aspects of tutoring and months of reading growth as well as potentially establish a correlation between actual reading growth and site staff perceptions of WRC impact.

The researchers could use the responses from these surveys to determine areas of deeper exploration and identify a subset of site staff to interview to gather further information to guide program improvement and/or future areas of study.

Appendix A: Data Files and Variables Used

Table 5: Data Files and Variables Used for Analysis

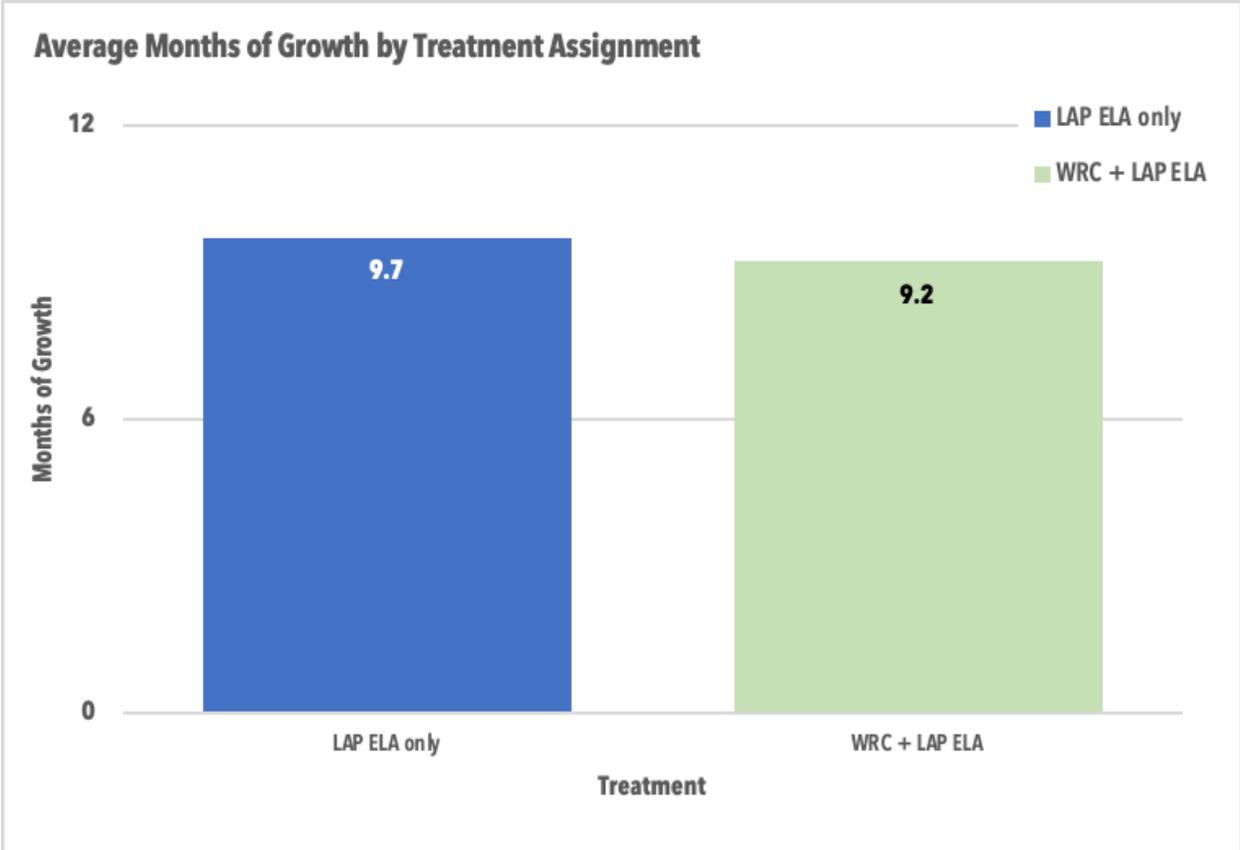
Data File	Variables Used
Enrollment and Demographics	<p>Research ID: a unique ID assigned to each student</p> <p>School Code: a unique school ID</p> <p>Race: the race/ethnicity of the student</p> <p>Gender: the gender of the student</p> <p>Grade Level: the grade level of the student</p> <p>Primary School Flag: indicator of whether the school code associated with the student is considered their primary school</p> <p>School Enrollment Date: the date on which the student began school</p> <p>Cumulative Days Present: the total cumulative number of days the student has been present and in attendance in the 2017-18 school year</p>
School Programs	<p>WRC flag: indicator of whether or not the student received WRC tutoring</p> <p>LAP ELA flag: indicator of whether or not the student received other LAP ELA services</p>
Growth	<p>Progress monitoring assessment: unique assessment measuring student performance on key reading and/or literacy outcomes</p> <p>Academic months of growth: a measure of academic growth in months based on progress monitoring assessments</p> <p>Beginning score: the first raw score or scale score from the progress monitoring assessment</p> <p>End score: the final raw score or scale score from the progress monitoring assessment</p>
FRPL Eligibility	<p>Free or Reduced-Price Lunch (FRPL) eligibility flag: indicator of whether or not a student is eligible for the federal Free or Reduced-Price Lunch program</p>
EL/LEP	<p>English Learner/Limited English Proficiency (EL/LEP) flag: indicator of whether or not the student is eligible to receive English Language Development services as an English Learner</p>

Table 6: Variables Used in Multivariate Matching for Student Selection

Matching Variable	Description
Free or Reduced-Price Lunch Eligibility Flag	Flag indicating if a student is eligible to receive Free or Reduced-Price Lunch (serves as a proxy for low-income status)
Grade Level	Indicator of a student's grade level with possible values K1 (Kindergarten), 1 (1st Grade), 2 (2nd Grade), 3 (3rd Grade), 4 (4th Grade)
Assessment Pre-score (scaled)	Z-score produced from assessment pre-scores as a function of student grade level and the unique assessment.

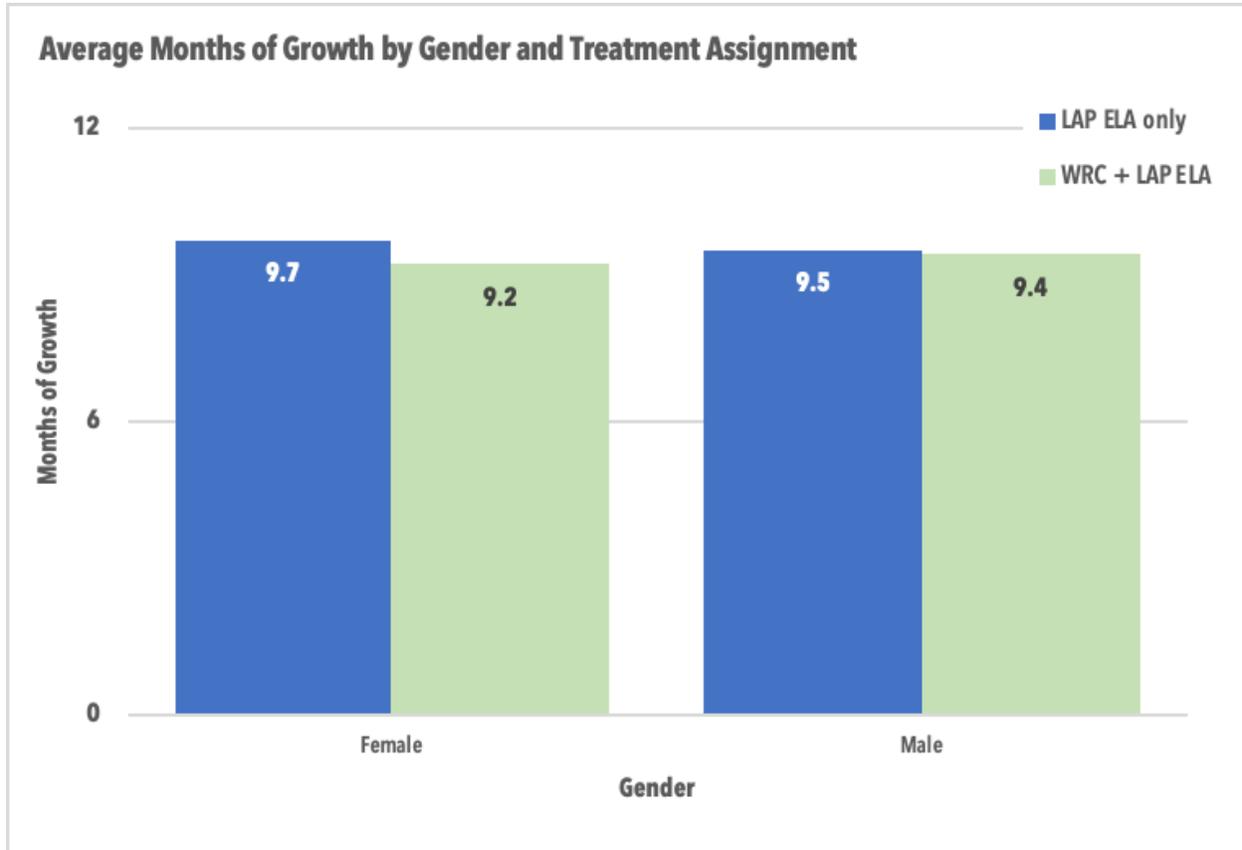
Appendix B: Student Descriptive Statistics and Average Months of Growth

Overall



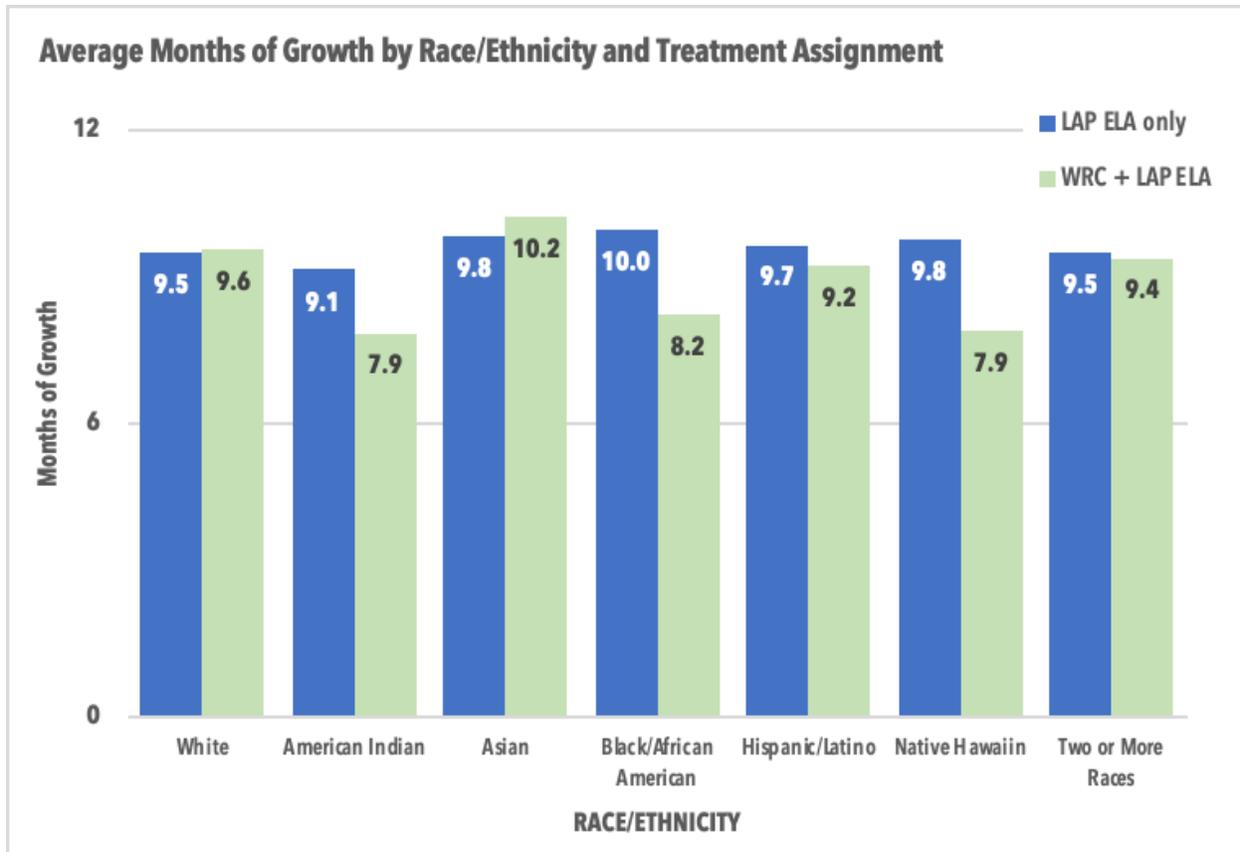
Treatment	N	Average Growth	SD
LAP ELA only	3671	9.66	6.55
WRC + LAP ELA	1857	9.23	5.73

Gender



Gender	Treatment	N	Average Growth	SD
Female	LAP ELA only	1727	9.70	6.32
Female	WRC + LAP ELA	885	9.15	5.76
Male	LAP ELA only	1890	9.53	6.57
Male	WRC + LAP ELA	955	9.35	5.73

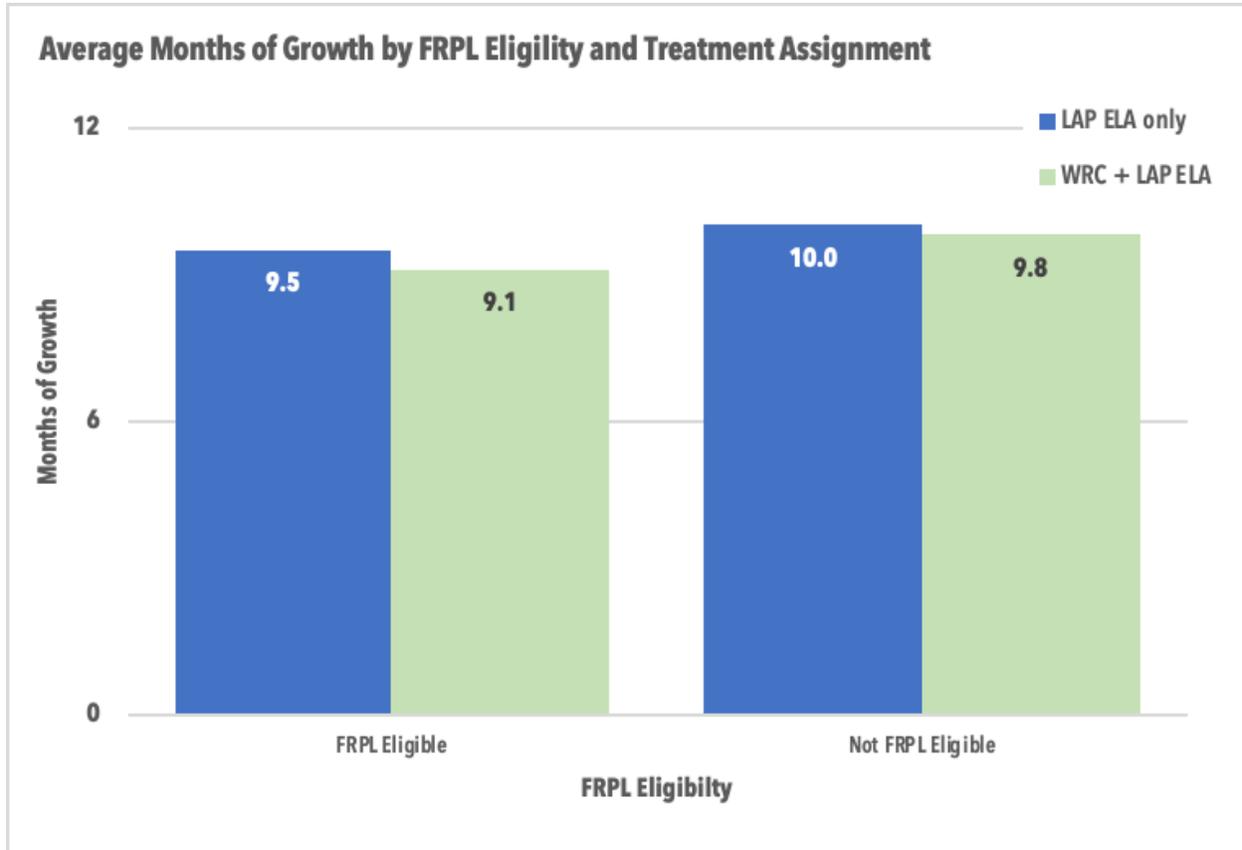
Race/Ethnicity



Race	Treatment	N	Average Growth	SD
White	LAP ELA only	1417	9.49	6.13
White	WRC + LAP ELA	887	9.57	5.77
American Indian/Alaska Native	LAP ELA only	52	9.13	6.27
American Indian/Alaskan Native	WRC + LAP ELA	168	7.86	5.79
Asian	LAP ELA only	102	9.84	6.31
Asian	WRC + LAP ELA	33	10.24	5.42
Black/African American	LAP ELA only	183	9.97	5.87
Black/African American	WRC + LAP ELA	47	8.23	4.77
Hispanic/Latino of any race	LAP ELA only	1599	9.66	6.84
Hispanic/Latino of any race(s)	WRC + LAP ELA	545	9.22	5.65
Native Hawaiian/Other Pacific Islander	LAP ELA only	33	9.76	6.69
Native Hawaiian/Other Pacific Islander	WRC + LAP ELA	20	7.90	5.35

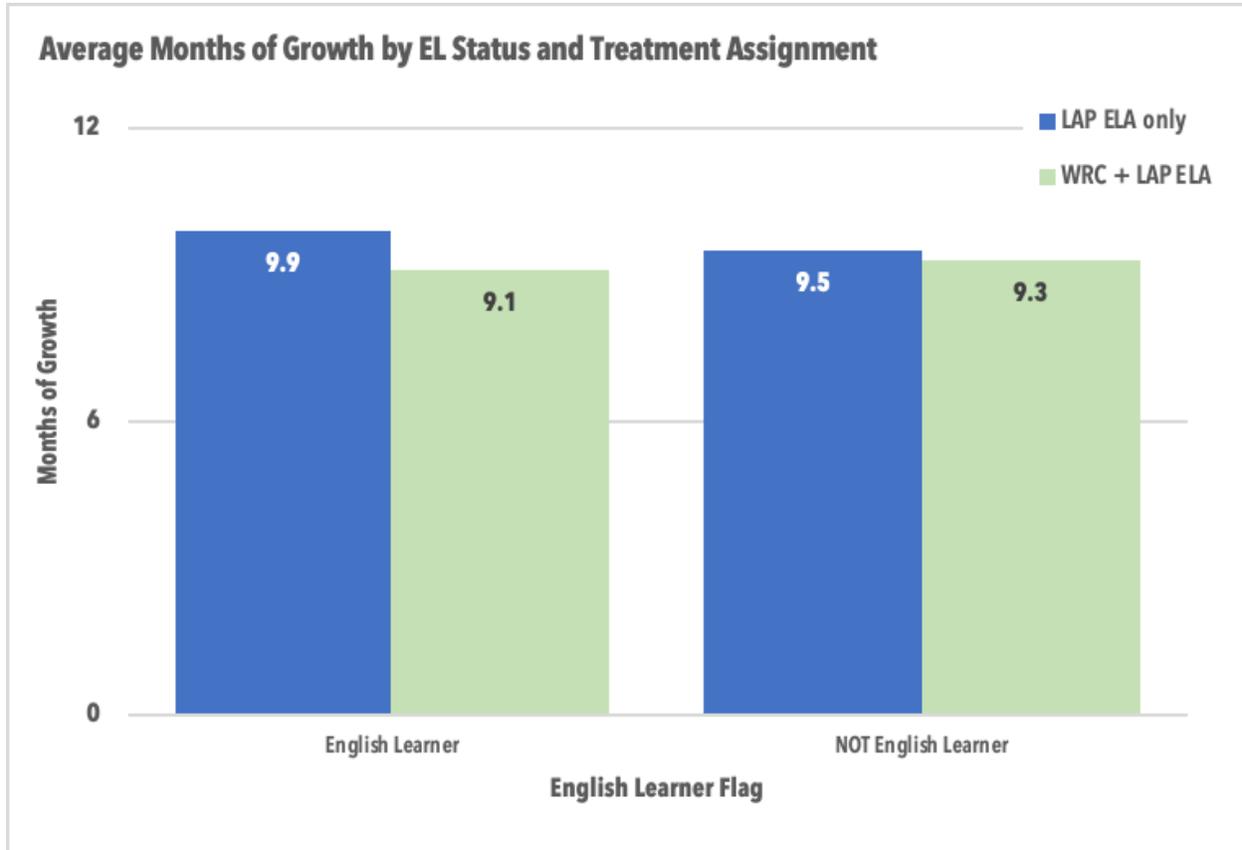
Race	Treatment	N	Average Growth	SD
Two or More Races	LAP ELA only	226	9.50	6.03
Two or More Races	WRC + LAP ELA	140	9.39	6.08

Free or Reduced-Price Lunch (FRPL) Status



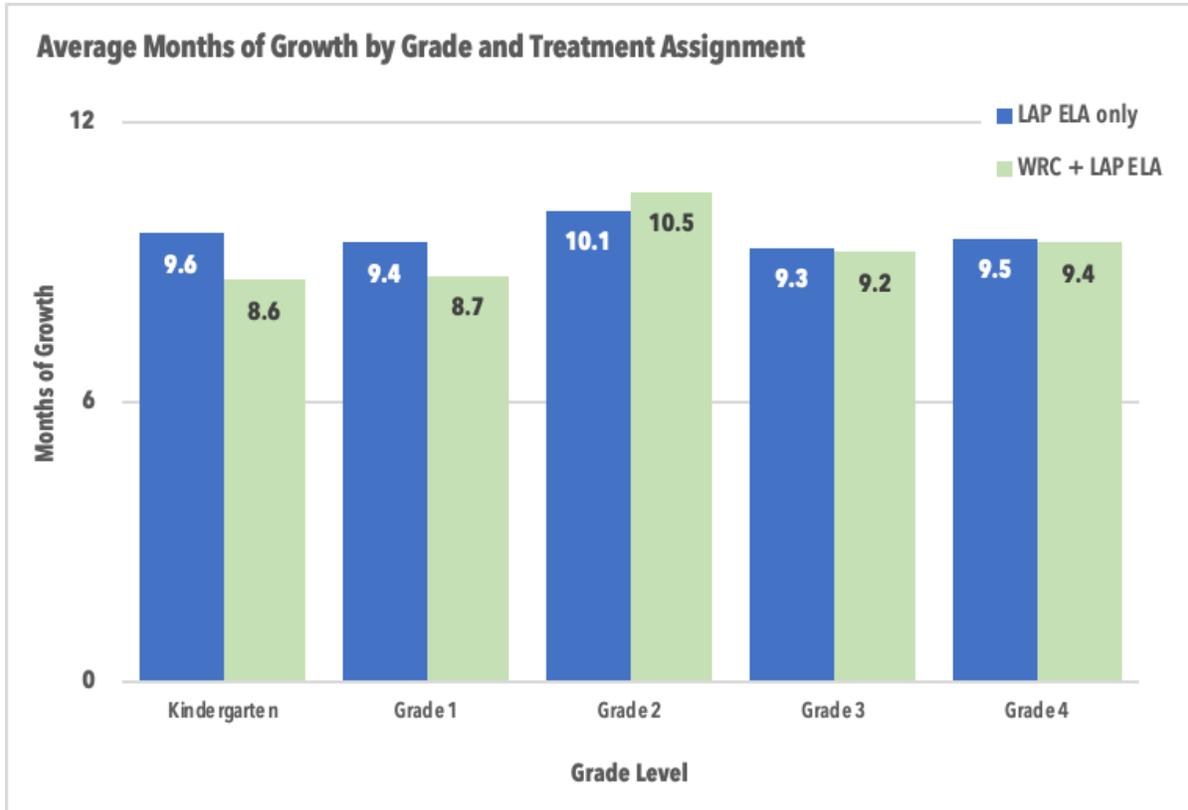
FRPL Eligible	Treatment	N	Average Growth	SD
No	LAPELA only	983	9.98	6.24
No	WRC + LAP ELA	513	9.75	5.79
Yes	LAPELA only	2634	9.48	6.53
Yes	WRC + LAP ELA	1327	9.07	5.72

English Learner (EL)/Limited English Proficiency Status



English Learner	Treatment	N	Average Growth	SD
No	LAP ELA only	2372	9.46	6.29
No	WRC + LAP ELA	1365	9.31	5.73
Yes	LAP ELA only	1245	9.90	6.74
Yes	WRC + LAP ELA	475	9.10	5.79

Grade Level



Grade Level	Treatment	N	Average Growth	SD
K1	LAP ELA only	824	9.64	6.07
K1	WRC + LAP ELA	455	8.61	5.15
1	LAP ELA only	844	9.43	6.55
1	WRC + LAP ELA	415	8.76	5.33
2	LAP ELA only	790	10.11	6.55
2	WRC + LAP ELA	395	10.48	5.80
3	LAP ELA only	640	9.31	6.42
3	WRC + LAP ELA	324	9.19	6.11
4	LAP ELA only	519	9.48	6.75
4	WRC + LAP ELA	251	9.41	6.54

Appendix C: WRC Site Supervisor Interview Questions

WRC Site Supervisor Interview Tool

Final (October 8, 2018)

1. Background

Question: Tell me about your work at **XXX school**: what are your primary responsibilities?

Followup: How long have you worked here?

Followup: How many WRC Members have you worked with during your time here?

Followup: What kinds of literacy activities have these members been engaged in?

- Probe to determine whether the members:
- Provide literacy tutoring to students (academic improvement);
- Coordinate and provide literacy-focused students and family engagement activities and events; and/or
- Recruit and support literacy volunteers from the community to provide literacy tutoring and student and family engagement activities and events.

Followup: What is your estimate of the percentage of the WRC Members' time spent on each type of activity?

Followup: What, if any, other activities did members engage in? If members have not engaged in any WRC literacy activities, do you know what kept them from engaging in the activities?

2. Questions about WRC Members' Work with Students and Families

As you respond to the next few questions think broadly about all of the WRC Members you've worked with over the past **XX** years.

Question: Please describe the ways in which members work directly with students and families at your site.

- Probe for specific activities: provide tutoring, organize reading groups, organize family literacy nights,
- Probe timing: during the school day, before and/or after school, evenings, school breaks, etc.

Question: How have members integrated literacy into existing events or activities, either during the school day, before or after school, or in the evenings (parent/family events and activities)?

- Probe for specific examples

- Probe for the results of the members' literacy integration work.

Followup: What impact or effect did the Members at your site have these events and activities?

Question: What role have members played in creating new literacy events or activities, either during the school day, before or after school, or in the evenings (parent/family events and activities)?

- Probe for specific examples
- Probe for the impact of the new literacy events or activities.

Followup: To what extent are these events and activities part of the ongoing life of your organization?

Question: What Alternative Service, if any, have members engaged in during the time they have spent with you?

Followup (if necessary): Please describe the nature of that service.

Followup: What partnerships or improvements in programming, if any, resulted from this Alternative Service?

Question: How have members supported relationship-building efforts with external partners or created or maintained partnerships with outside organizations?

Followup: What was the nature of those efforts?

Followup: What ongoing partnerships or improvements in programming, if any, resulted from these efforts?

3. Questions about WRC Members' Work with Literacy Volunteers

As you respond to the next few questions, think broadly about how all of the WRC Members you've worked with over the past XX years have worked with volunteers from the community who serve at your site.

Question: Please describe how members have supported and/or contributed to literacy volunteering at your site.

- Probe to determine the type of support or contribution (e.g., recruited volunteers, coordinated volunteers, supervised volunteers, trained volunteers, mentored volunteers).
- Probe to determine the kinds of training members provide to tutors.
- Probe to determine the ways in which they mentor tutors.
- Probe to determine the kind of supervision they provide to tutors.

Question: Please describe the literacy tutoring volunteers have provided for students at your site.

- Probe to determine: peer-to-peer, cross-age, adult-led tutoring
- Probe to determine: episodic or ongoing and approximate dosage (e.g., twice weekly)

Question: Tell me about the other literacy activities these volunteers have engaged in, in addition to tutoring.

- Probe to determine which, if any, of the following volunteers have engaged in: hosting literacy nights, organizing books drives, creating send-home reading bags, organizing literacy focused events with books stores, restaurants, etc.
- Probe to determine: what would likely have happened in the absence of WRC Member placement (tutor fewer students or have no tutoring, have fewer or no literacy-focused events and activities).

4. Questions about WRC Program and Member Impact

Question: What impact or effect did the WRC program have on literacy tutoring and other literacy activities at your site?

Question: What impact or effect did the WRC program have on students, parents, volunteers, other site staff, and the school as a whole?

Follow up: What impact or effect did the WRC program have on students?

Follow up: Tell me about the evidence you see for the impact or effect on students.

Follow up: What impact or effect did the WRC program have on parents?

Follow up: Tell me about the evidence you see for the program's impact or effect on parents.

Follow up: What impact or effect did the WRC program have on volunteers?

Follow up: Tell me about the evidence you see for the program's impact or effect on volunteers.

Follow up: What impact or effect did the WRC program have on other site staff?

Follow up: Tell me about the evidence you see for the program's impact or effect on other site staff.

Follow up: What impact or effect did the WRC program have on the school as a whole?

Follow up: Tell me about the evidence you see for the program's impact or effect on the school as a whole.

Question: Were members able to implement events or activities at your site that you would have been unable to implement if the members had not been placed at your sites.

Follow up: If so, tell me about those activities and events and why you would have been unable to implement them without the member placements.

Question: What impact or effect did the WRC Members' engagement in Alternative Service have on the school or community?

Question: Tell me about your view of how the WRC program as a whole is perceived by students, parents and family members, volunteers, and other site staff.

- Probe to determine what interactions, conversations, or observations lead to the conclusions about how the program is perceived.

Question: Tell me about your view of how individual WRC Members are perceived by students, parents and family members, volunteers, and other site staff.

- Probe to determine what interactions, conversations, or observations lead to the conclusions about how WRC Members are perceived.

Appendix D: WRC Site Supervisor Interview Content Analysis

		Region				
	Theme	Southwest	North west	STO	East	Sample Quotes
1	Supervisor Background					
1a	Responsibilities	Reading Specialist and Special Ed Teacher	Title One Literacy Teacher	Principal	Reading Intervention Teacher/ Assessment Coordinator	<i>I am a 2nd through 6th grade reading intervention teacher. I am also the district assessment coordinator. I sit on the child study committees of both the Elementary and the Junior High School/High School building and I am still... consulted as curriculum director, although at this point in time we're not really following a curriculum adoption.</i>
1b	Longevity	30 years in District; 10 years as Site Supervisor; Part Time	4 years in District; 30 years as a teacher; 4 years as Site Supervisor in Bellingham, 3 years' experience as Site Supervisor in another district	12 years in District	28 years in District	

		Region				
	Theme	Southwest	Northwest	STO	East	Sample Quotes
1c	WRC Experience	20 years	7 years	5 years	20 years	
1d	Member Experience	30 to 40 years total	12 years total (7 Bellingham, 5 previous district)	5	30 to 40 years total	

		Region				
	Theme	Southwest	Northwest	STO	East	Sample Quotes
2	Member Activities					
2a	Tutoring Percentage and Details	80% Direct tutoring, mostly pull-out, mostly 1:1	75% Direct tutoring, mostly in-class, mostly 1:1	90% Direct tutoring, mostly pull-out, small group, and 1:1 reading	80% Direct tutoring 1:1 or small group tutoring, both in-class and pull-out	<p><i>[Members work with students] on the sight words and on the reading passages and maybe having the text pre-read ... to give them that extra support ...</i></p> <p><i>We have [the Members do] push-in ... within each grade level, to get a sense of what are the skills and some of the vocabulary that the teacher uses specifically in terms of literacy. Also looking at, at some behavioral management skills that are used within each of those classrooms... [Members] are supporting the classroom teachers and the students within those classrooms, trying to coordinate and collaborate rather than have them be taught things in isolation.</i></p>
2b	Other Literacy Percentage and Details	5% Before and after school literacy groups Before and after school literacy workshops for parents Posting literacy videos for parents on the school website	15% Before/ after school activities (Club de la Cultura, book clubs) Create literacy materials for classrooms Help with summer school literacy activities Organize library materials, etc.	6% Before and after school literacy focused activities Help in the library during recess and after school Lunch group literacy (reading and games) Organize book drives	13% Before and after school literacy focused activities (book groups, etc.) Reading contests and book drives Help with HOSTS program and 21 st CCLC reading tutoring Lunch group literacy	<p><i>[Members have implemented] before and after school literacy group activities. We usually focus on one grade level...this year... it's going to be focused on second and third graders.</i></p> <p><i>[Members have implemented] literacy workshops for our parents before and after school. Sometimes it will just focus on one grade level, like say kindergarten and we invite parents to come in to learn about how to teach your students phonemic awareness. So show them rhyming games or different things like that. So they can do it with their kids at home.</i></p>

		Region				
	Theme	Southwest	Northwest	STO	East	Sample Quotes
2c	Family Engagement Percentage and Details	10% Family nights monthly with two literacy nights a year Members have responsibility for hosting literacy events and for building literacy into other events.	10% Implement literacy activities at all PTA family events, but do not have primary responsibility for making events happen.	1% Provide literacy support for family activities Do some planning and implementing of literacy activities (like author nights), but mostly build literacy into existing activities	5% Provide literacy support for family activities – two larger literacy events + monthly family events Members very involved in planning as well as implementing	<i>This year our theme is “Polar Animals” and so every station is going to ... be focused on different, comparing and contrasting like the Orca and the blue whale and the kids will have little fact sheets that they fill out and also some fun crafty artsy activities to go along with it.</i> <i>[Members have] done literacy workshops for our parents before and after school. Sometimes it will just focus on one grade level, like say kindergarten, and we invite parents to come in to learn about how to teach your students phonemic awareness ... show them rhyming games or different things like that... they can do with their kids at home.</i> <i>WRC Members coordinate with PTA... they attend every meeting and in every event that PTA puts on, they are WRC Members that add an element of literacy support...[For a recent pumpkin-carving event], WRC created a fall literacy resource book that had some suggestions of different high interest books per grade level...and how to help parents read at home with your students.</i> <i>Even if it's a math night or science night, they [WRC Members] always think of some literacy -related...activity thatcan be a part of the family night.</i>
2d	Volunteer Percentage and Details	5% Recruitment, some training, some coordination or scheduling Recruit at Career Fairs, local high school, college, businesses, and naval base	0%	3% Recruitment, some training, some coordination or scheduling Joint training and placement of volunteers with UW	2% Recruitment, some training, some coordination or scheduling	<i>[Members] go talk to [local high school] students about the possibility of volunteering and also about possibly being Members at some point in those students' lives. They go to meet with Key Club and Honor Society at our local high school. They try to get there a couple times a year... we get a lot of volunteers that are school through that.</i> <i>A WRC Member from about three years ago ... developed that [training] PowerPoint for our volunteers...</i> <i>It takes more coordinating with the classroom teachers, like finding out what time are you willing to take volunteers? So [Members] do a lot of that – writing down the times that [teachers need volunteers] and find like, students from the high school that get out an hour early to go help and first grade... The first couple of times the volunteers come, [Members] will meet them in the office, show them how to sign in ... introduce them to the teacher and the student, and then after that it becomes kind of the students just show up and come and know what to do.</i>
3	Tutoring Details					
3a	Member Tutor Ratio	Mostly 1:1, some small group Volunteers do only one-on-one	Mostly 1:1, some small group	Members do both 1:1 and small group daily during school Volunteers do only one-on-one	Members do both 1:1 and small group daily during school	

		Region				
	Theme	Southwest	Northwest	STO	East	Sample Quotes
3b	Member Tutoring Model	<p>Pull-Out with some Push-In</p> <p>Ongoing tutoring, mostly outside of reading block, but linked to what's being taught in the classroom</p> <p>Members help teachers/paras plan and tutors implement tutoring</p>	<p>Push-In</p> <p>Teachers/paras plan and tutors implement tutoring during "intervention blocks" throughout the school day every day</p>	<p>Pull-Out</p> <p>Member tutor mostly through pull-out in small groups</p>	<p>Pull-out reading with students</p> <p>In alignment with classroom teachers</p>	<p><i>[Members] are considered part of our support services and we choose really carefully who they work with and what they do. And so there's times that ... students that are really close to having grade level skills... just an extra little boost and so we can have WRC do a book club with a group of students that. Or they're students that are really, really at risk and the classroom teacher provides instruction then we may have WRC follow up with those same kids, working with specific sight words or on certain targeted blends that the students might not have or specific skills that are very targeted to as a third boost for increasing their literacy skills.</i></p> <p><i>...students sometimes resent being pulled out to do some things, but the mentors work really hard to make their activities engaging and they choose books that the kids really like so I think that the students' overall perception is that it's a good thing and it's a fun thing.</i></p>
3c	Other Tutoring	<p>Episodic 1:1 tutoring provided by volunteers</p> <p>Peer tutoring provided by 7th and 8th graders, mostly literacy games at lunch or recess</p>	None	Episodic 1:1 tutoring provided by volunteers	Episodic 1:1 tutoring provided by volunteers	<p><i>What our WRC [Members] do is they figure out the students that are going to be tutored, they talked to teachers and then help make the schedule. What the seventh and eighth graders do is give up ... one or two of their recesses a week on kind of an alternating schedule so that they're not all out every recess. The seventh and eighth graders then to come grab their folder and go meet with their students. And usually it's something really simple, like they're just working on sight words... playing maybe concentration with the sight words that the kids are working ... we've got all kinds of games like Candyland, Chutes and Ladders that are vocabulary games or sight word games.</i></p>
4	Alternative Service and Partnerships					
4a	Alternative Service	Boys and Girls Clubs, Kitsap Public Library, YWCA	None; they work for the district doing non-student things during breaks (organizing library, etc.)	South Sound Reading Foundation Centro Integral Educativo para Latin@s En Olympia (CIELO) – with bilingual students	No formal alternative service because of the rural location Members tend to figure out literacy-related projects on their own to do during breaks and summer	<p><i>[In the summer, Members have] gone to the Boys and Girls Club because we have a lot, of course students, that have been there -- their own students and also other students from our school that are part of Boys and Girls Club in the summer. So they're able to kind of carry on tutoring with them in those locations...</i></p>

		Region				
	Theme	Southwest	Northwest	STO	East	Sample Quotes
4b	External Partners	Costco, Local High School, Local Library, Washington Youth Academy, Bremerton Naval Base, Olympic College	None (want Members to focus on direct tutoring)	South Sound Reading Foundation Centro Integral Educativo para Latin@s En Olympia (CIELO) – with bilingual students	None (remote rural location makes it difficult)	<p><i>One of the librarians is ... bringing something to do with [family literacy nights] ... She knows our theme is the Polar regions -- animals of the polar regions -- so she's bringing [books and materials about that] and she also will bring things for parents to fill out, information to get library cards, and she hands out free bookmarks and gives parents information about things going on at the local libraries...over Christmas break and things like that.</i></p> <p><i>[Members have helped strengthen partnerships and make it so district continues to work with organizations even when Members aren't there]</i></p>
5	WRC Impact					
5a	Improve student outcomes	Helps with reading growth and attitudes toward reading	Helps with reading growth and attitudes toward reading	Helps with reading growth, attitudes toward reading, and behavior management	Helps with reading growth and attitudes toward reading Improves attendance	<p><i>Just making that smaller one-to-one or small-group contact with those kids make such a huge difference because a lot of kids just need that extra little push and extra little cheerleader kind of sort of. I think the relationships are huge, too. Just another friendly face in the hallway or another person that comes in the room, that cares about them... makes them happier to be at school, I think, and helps them learn more because of that.</i></p> <p><i>[WRC Members] help those struggling readers [who] might not be struggling so much that they get as much help maybe from like a Title I or a Special Ed teacher. So, it's kind of helps fill that gap with the students that really do need help and they're able to make some good progress with them because their kids that sometimes have only lacked being at benchmark because of lack of instruction or nobody reads with them at home.</i></p> <p><i>Right now, we have a list of students that need support and there is no other way to give them that support because ...we are not a LAP School ... we're not a Title I school, we don't have a reading interventionist, we don't have anything like that in our schools, so the only thing that we have is the AmeriCorps [Members].</i></p> <p><i>Those students that are receiving extra services with Reading Corps do tend to make gains, maybe not up to benchmark, but for the most part they've made at least 2 years' [growth] ... and... then a lot of them show an increased good attitude towards reading [compared to] the beginning of the year.</i></p>
5b	Improve volunteer experience	Makes volunteer experience smoother and helps with training	Not applicable	Makes a Difference	Makes volunteer experience smoother and provides support for volunteers	<p><i>[Members make volunteering] more personable ... somebody is meeting them in the office, somebody is remembering to send them a thank you note...having the kids draw pictures for the volunteers...</i></p>

	Theme	Region				Sample Quotes
		Southwest	Northwest	STO	East	
5c	Increase volunteer numbers	Helps increase the number of community volunteers	Not applicable	Helps increase the number of community volunteers	Volunteer program is strong and extra recruitment isn't needed, so doesn't really have an impact on numbers	<p><i>[Members are] making them feel really appreciated and I think that helps bring those volunteers from year to year.</i></p> <p><i>[There] wouldn't be as many volunteers [if Members weren't there to] take some of the burden off the classroom teachers, to have that interim person to figure out what that student needs and help get materials ready for them and you know, that's hard for teachers to do.</i></p>
5d	Help teachers do their job	Gives teachers more time; takes some burdens off their plate	Gives teachers more time; takes some burdens off their plate	Gives teachers more time; takes some burdens off their plate	Gives teachers more time; takes some burdens off their plate	<p><i>I know the teachers and the parents both appreciate the fact that students are getting help because like I say, they don't necessarily fit [Title One or Special Ed requirements]. [Teachers] appreciate that extra time they're getting with instruction. It takes a lot of take the pressure off the teacher, finding time to work with those students...it gives them just that extra opportunity of small group instruction, which is invaluable.</i></p>
5e	Improve parent knowledge and skills	Help parents learn how to support literacy at home	Help parents learn how to support literacy at home	Didn't directly address	Help parents learn how to support literacy at home and find books to read with their children	<p><i>So, I think helping give them the skills to help their kids at home and then parents appreciate that because they're not always aware of how to, how to help their students.</i></p> <p><i>[Members put together] just a really nice little booklet to help parents read at home with [their] students, with [their] kids.</i></p>

		Region				
	Theme	Southwest	Northwest	STO	East	Sample Quotes
6	Impression of WRC					
6a	Site Supervisors	Wouldn't be able to do some of the programming without them	All programs would still happen, but wouldn't be the same, not as deep, not as literacy focused. Summer school would be a watered-down version	All programs would still happen, but wouldn't be the same, not as deep, not as literacy focused	All programs would still happen, but wouldn't be the same, not as deep, not as literacy focused.	<p><i>Without our Washington Reading Corps [Members], we wouldn't be able to put on the family literacy nights the way that we do because they take hours and hours and, as the years go on, I find that it's harder and harder to get any teachers to become a part of it... because everybody's so overloaded. [Members are] able to offer that extra thing for families in the community that may otherwise not [happen].</i></p> <p><i>You're really getting a good bang for your buck if you're paying whatever your \$6,000 or \$7,000 for your Member. We love the Washington Reading Corps program!</i></p> <p><i>[Despite the paperwork burdens that made several other district schools decide to drop WRC], it was just not even a question. All that being said, all the requirements and all the things that we have to do for WRC organization is worth it because they, they are just a really important part of our staff.</i></p> <p><i>Yes, the impact is huge I am missing them terribly this year! The whole community notices that difference. (School had been unable to find Members)</i></p> <p><i>There isn't a lot of time [for staff] to do extras, but with the Reading Corps members being there ... they actually plan the activities that we're doing, then basically all I have to do show up to support them. They do the heavy lifting, so if we didn't if we didn't have Reading Corps that wouldn't happen.</i></p> <p><i>[Members] are a critical piece of the summer school program ... I don't know if [summer school staff] could literally pull it off without [the Members] ... they're a critical, critical piece.</i></p>
6b	Teachers	Teachers and families deeply appreciate the work Members do	Teachers and families deeply appreciate the work Members do	Teachers and families deeply appreciate the work Members do	Teachers and families deeply appreciate the work Members do	<p><i>[Teachers] are so appreciative and they show a lot of appreciation for our WRC Members and they just treat them as part of the team.</i></p> <p><i>I just say overall, as a general summary of our schools attitude and appreciation for WRC, they're most beloved.</i></p> <p><i>From staff, I, I just think they're really valued, respected members of our staff and, and treated as such. We sometimes will joke about like we can't control the pay scale but we can sure make up for it with our appreciation for what they do.</i></p>

	Theme	Region				Sample Quotes
		Southwest	Northwest	STO	East	
6c	Students and Families	Students and families perceive and respect Members as teachers	Students and families perceive them as and respect them as teachers	Parents very complimentary; appreciate the extra literacy support Members provide	Parents very complimentary; appreciate the extra the literacy events and activities Members do	<p><i>We put out surveys ... at our family nights of course, and we get really positive feedback on those things...</i></p> <p><i>Parents ... say, gosh, I hadn't even thought about how to, you know, read a story and have the kids make predictions, looking for words that they might know ... parents appreciate [Members' help with] that because they're not always aware of how to, how to help their students.</i></p> <p><i>It's funny because even though we sent out the letters that your student's getting tutored by Washington Reading Corps ... they're kind of confused who's helping [the student] and they just think [the Members] are either volunteers or their employees of the school. So, it's hard sometimes to get some clarity out there, what they are.</i></p> <p><i>Parents notice that their students are making progress ... especially when the students graduate ... and they are ecstatic...</i></p>
6d	Partners	Partners appreciate the support Members provide for their programs	Not Applicable	Partners appreciate the support Members provide for their programs	Not Applicable	<p><i>The Boys and Girls Club ... last year, they called me and said are we going to get some of your members this year? So for the summer. They definitely appreciate that extra help.</i></p>

	Theme	Region				Sample Quotes
		Southwest	Northwest	STO	East	
7	Impact on External Partners					
7a	Make existing partnerships stronger	Members help deepen relationships with partners	Not Applicable	Members help deepen relationships with partners	Not Applicable	<i>[As a result of Members work with external partners], CIELO has been more integrated, not only with our school but the Olympia school district and that has been a really fabulous partnership... having members go and help [makes it stronger].</i>
7b	Create new partnerships or programs	No	Not Applicable	No	Not Applicable	<i>[While Members strengthen and support existing partnerships, they have not developed new partnerships that didn't exist previously]</i>

	Theme	Region				Sample Quotes
		Southwest	Northwest	STO	East	
8	Other Comments					
8a	Burden of paperwork	<p>Burden is high, but is worth it for them</p> <p>Site Supervisor knows of other districts that have dropped WRC because of the paperwork and reporting burdens</p>	<p>Burden is high, but is worth it for them</p> <p>Site Supervisor knows of other districts that have dropped WRC because of the paperwork and reporting burdens</p>	Not mentioned	<p>Burden is high, but is worth it for them</p> <p>Site Supervisor understands why schools drop WRC because of the paperwork and reporting burdens</p>	<p><i>There's several schools in our own district that used to have Washington Reading Corps members and they just, they've kind of dropped it because somebody retired, you know, and nobody was willing to take it on or because it is a lot of work [paperwork for application, oversight, reporting].</i></p> <p><i>Last year...there were several schools within our district that opted not to have WRC people because of the amount of paperwork and requirements and all the other things that go along with them when, you know, when whoever supervises them is a teacher as well and all our commitments.</i></p> <p><i>The federal program continues to add paperwork and time requirements ... as a Site Supervisor, I get two people and a ton of extra duties added to an already overly-full schedule... that would be the thing that [might drive us to] discontinue the program just because, again, you can only squeeze so much blood out of a turnip. They do need they do need to understand that site staff at the schools that have reading Corps in place do not get any compensation ... for the extra work ... to have the program in place.</i></p> <p><i>This summer, trying to get two people signed up, I probably put in 20 to 30 hours on double checking paperwork and making phone calls and tracking people down and getting them to the right place for fingerprints and all of that. And that's my time off!</i></p> <p><i>It is a great program, but in the years that I've been doing it there have just been more and more demands placed upon me as the Site Supervisor, and more and more money that comes out of our district to pay for the position, which again, it's well worth it, but it is maybe going to reach a point where there are diminishing returns. I don't know...I haven't seen that yet, but it could get there.</i></p>
8b	Other challenges	None noted, other than paperwork burden	Had a Member who wasn't a good fit and had medical/behavioral issues	None noted	Have had to release Members from service because they weren't a good fit	<p><i>We got the WRC supervisor's help ... but it was like putting a round peg in a square hole ... it was very challenging when it's not a good fit. Part of that was on us because my vice principal did an interview, and just felt like, well if he made it through the WRC screening process maybe it's going to be okay. I just have to say that that was just super, super challenging when it, when it wasn't a good fit.</i></p>

	Theme	Region				Sample Quotes
		Southwest	Northwest	STO	East	
8c	Other positives	None noted	None noted	None noted	<p>WRC gets people interested in education careers</p> <p>Having WRC provide a positive impression of school and district and may help when parents are voting on funding levies</p>	<p><i>In the 20 years that I've been [working with WRC Members] I have had two members that have actually gone on and become teachers and one of them is currently a 2nd grade teacher in this building. I have two other members that have gone on and become para educators or substitute teachers while they are finishing up a program that they are going through on their [AmeriCorps] education award... I know that at least one other one is working in education but more in a central office position and then I also happen to know that we have some para pros working in our district that have been AmeriCorps Members ... the program does get people involved in the field of education.</i></p>

Appendix E: WRC Logic Model

NEEDS (Community Problems)	INPUTS (Project Resources)	ACTIVITIES (Core Components)	OUTPUTS (Implementation & Participation)	OUTCOMES (Evidence of Change)		
				Short-Term (Participant Level)	Medium-Term (Program/Site level)	Long-Term (Population level)
<p>In WA, the % of students who demonstrate age- and grade-appropriate language, literacy, and reading skills is especially low for low-income and English Learners (EL) students.*</p> <p>(a) Entering kindergarteners with age-appropriate skills:</p> <p><i>Language skills</i></p> <ul style="list-style-type: none"> All: 41%. Low Income: 31%. EL: 25%. <p><i>Literacy skills:</i></p> <ul style="list-style-type: none"> All: 60%. Low Income: 42%. EL: 42%. <p>(b) 4th graders who meet or exceed grade-level standards in English Language Arts:**</p> <ul style="list-style-type: none"> Low-income: 42%. Not low-income: 75%. EL: 14%. Not EL: 65%. <p>WA has a limited pipeline of qualified teachers, early learning and elementary teachers.***</p>	<p>OSPI and WSC staff who provide leadership, guidance, training, TA, and program coordination.</p> <p>AmeriCorps members who tutor students,, recruit and engage volunteer tutors, and provide parent outreach and engagement.</p> <p>Community tutors who provide additional tutoring</p> <p>Program site staff who provide member supervision, support, and training in site-specific literacy and reading curricula.</p> <p>Regional ESD staff who provide TA from literacy specialists.</p> <p>WA's Comprehensive Education Data and Research System (CEDARS), which collects, stores, and reports data on student-level enrollment, completion, and proficiency.</p>	<p>AmeriCorps Members:</p> <ul style="list-style-type: none"> Provide evidence-based reading tutoring individually and in small groups to (a) to K-4th grade students below benchmarks in literacy and reading, through intensive 15+-minute sessions, 3+ times a week and (b) to preschool children through literacy activities throughout the day. Design, implement, and/or provide support for activities that help parents support children's literacy and reading proficiency. Recruit and manage community volunteers to provide additional tutoring. <p>OSPI, WRC, and Program site staff:</p> <ul style="list-style-type: none"> Provide evidenced-based training and ongoing support in literacy concepts, best practices in reading tutoring, and effective student engagement strategies. Provide hands-on classroom experience, supervised by certified educators a Provide access to other professional learning. 	<p>AmeriCorps members trained & hours of training.</p> <p>Sites receiving Member placements.</p> <p>Low-income K-4 students who are enrolled, screened, and tutored in reading.</p> <p>Low-income preschool children who are enrolled, screened, and tutored in language and literacy.</p> <p>Hours of reading/literacy tutoring provided .</p> <p>Enrolled participants who complete the program.</p> <p>Completing K-4 students who reach grade level proficiency OR make at least 11 months' reading growth in one academic year.</p> <p>Completing preschool children who demonstrate age-appropriate language and literacy development.</p> <p>Family members who participate in literacy-focused school or home activities.</p> <p>Community volunteer tutors recruited and trained.</p>	<p>Among completing participants, improvement in:</p> <p>Reading attitude and behaviors, measured by post-program surveys.</p> <p>Language and literacy skills, measured by pre- and post-program assessments.</p> <p>Reading proficiency or months of reading growth, measured by pre- and post-program assessments.</p> <p>Increases in family participation measured by parent surveys and event sign-ins.</p> <p>Reports by WRC members that they intend to pursue career pathways into education, measured by surveys.</p>	<p>At program sites, increases in:</p> <p>The % of children with age-appropriate language/literacy skills, measured by benchmark assessments.</p> <p>The % of students who achieve grade-level reading proficiency, measured by performance on state reading assessments.</p> <p>The % of children and students who read outside of school and families who support reading at home, measured by surveys.</p> <p>A decrease in disparities in reading proficiency, measured by performance on state reading assessments.</p> <p>Reports by former WRC members that they started on career pathways in the field of education, measured by alumni surveys.</p>	<p>At schools statewide, increases in:</p> <p>The % of students who meet or exceed proficiency benchmarks in English Language Arts, measured by performance on state assessments.</p> <p>The % of students who graduate high school on time, measured by state high school graduation data.</p> <p>The % of high school graduates who enroll in and successfully complete postsecondary programs, measured by longitudinal data.</p> <p>Reports by former WRC members that they have become teachers, helping address the state's shortage of qualified teachers measured by surveys and state teacher data.</p>

* Data from 2017-18 WAKids assessment of entering kindergarteners' skills in multiple domains of school readiness, showing the % of kindergarteners who demonstrate "the skills expected of 5-year-olds" in each domain.

** Data from 2015-16 Washington State *report card* (<https://washingtonstatereportcard.ospi.k12.wa.us/ReportCard>) summarizing results of assessments of reading proficiency for 4th grade students that show the % of students who met or exceed basic grade-level proficiency in English Language Arts. *** Data from a 2015 survey of WA principals showing the state's difficulty finding qualified teachers (45% were unable to find fully-certified and appropriately-qualified teachers for all classroom positions that needed to be filled; 80% employed classroom teachers using emergency certificates or long-term substitutes; and more than 90% indicated that they were "struggling" or in a "crisis" mode in finding qualified candidates.